Canadian Urban Trends

**Metropolitan
Perspective
Volume 2**

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Perspective
Volume 2

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Canadian Urban Trends
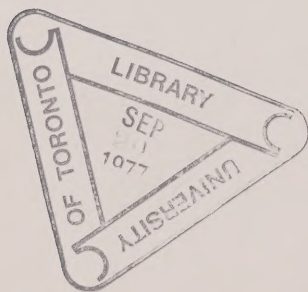Volume 1 National Perspective
Volume 2 Metropolitan Perspective
Volume 3 Neighbourhood Perspective

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Acknowledgements

Canadians are predominantly urban, and
Canada has one of the most rapid rates of urbanization
... world. If the ... of high urban growth rate is
... ... ultimately, then the decision-makers
... the general public must have available to them
... and analysis that will explain the general
... of the problem. This handbook provides
... ... ral orientation, giving the user a set of
... ... maps and descriptive text outlining the
social and economic ramifications of growing
urbanization.

The handbook will be particularly useful to:
1. governmental policy-makers;
2. corporations and individuals needing general
information on the problems of urban growth and form;
and
3. the research community.
The handbook helps to fill a gap in the existing
information on urban Canada by retabulating data for
census years 1911 to 1971 on the basis of a consistent
set of census division boundaries and adding special
tabulations, never before published, on key issues such
as income and manufacturing. By supplementing the
data presentation with descriptive and analytical text,
graphs, charts and maps, the users are provided with a
perspective on the urban problems that will assist them
in dealing with the issues of urban growth in Canada.

Barney Danson,
Minister,
Ministry of State
for Urban Affairs.

Preface

Three out of four Canadians live in urban places and one in two live in the Census Metropolitan Areas, our largest urban places with populations of over 100,000. Canada is indeed both one of the most urban and one of the most rapidly urbanizing countries in the developed world. The percentage of Canada's population classed as urban has increased at every census in the century since Confederation, and the Census Metropolitan Areas have alone accounted for three-quarters of Canada's total population growth since they were first defined in 1951.

Not all of Canada's cities have shared equally in the high rates of population growth which have characterized urban Canada as a whole. Furthermore, urban growth disparities are in turn associated with a wide range of interrelated urban problems such as environmental decay, housing shortages and disparities in income levels and employment opportunities. Rapid growth, at one time vaunted as a goal in itself and a panacea for many of the nation's problems, is now recognized as creating new problems, new demands and accentuated competition for resources.

A prerequisite to diagnosing urban problems and evaluating policy alternatives is the tabulation and analysis of a wide array of economic, demographic, social and cultural data on urban areas. By its very nature, a city is an extremely complex system of interacting components in which change in any one component affects all other components of the system. Industrial growth in a city, for example, increases in-migration to that city from elsewhere in Canada and abroad, with implications for the age-sex profile of the population and its ethnic and religious composition, and all of these changes in turn affect the demand for housing and for social and other services. Furthermore, cities are themselves components of a complex interacting system of cities in which changes in one urban area affect all others. A major retailing firm decides to close its mail-order business, an airline relocates its service depots, a mining company develops a new resource site, and in each case repercussions are felt throughout the urban system. The cumulative effect of a myriad of such decisions is continually redrawing the map of the nation. Thus, whatever the immediate concerns or interests in urban Canada of the individual, whether businessman, policy analyst, researcher, planner or educator, a proper understanding of their alternatives and opportunities ultimately requires some consideration of a wide array of social, economic, demographic and cultural data.

This series of data handbooks provides a convenient source of a wide range of data on the cities and neighbourhoods of urban Canada. The text accompanying the tables assists in explaining the precise meaning of each data set and points out the significance of the data and some of the relationships among the various measures. The maps present a selection of these measures to show their spatial patterns.

Volume I focuses on the 137 urban areas over 10,000 population in 1971, which accounted for 70 percent of Canada's population at that time. Individual chapters are concerned with urban population growth, the urban economy, manufacturing, income disparities, the family life cycle, the cultural mosaic, housing and patterns of interaction among urban areas.

Volume II considers the 22 Census Metropolitan Areas, both as single entities and as agglomerations of neighbourhoods. Differences among metropolitan areas and neighbourhoods in terms of the family life cycle, income and cultural characteristics are discussed. Volume II serves as a review of the much more exhaustive data presented in Volume III for each of over 2,200 metropolitan sub-areas. The text in

Volume III is limited to the definitions and commentary
necessary for a correct interpretation of the tables and
maps in that volume.

Although the data presented in this series are
derived almost entirely from Statistics Canada's
data base, these volumes are complementary to the
regular series of Statistics Canada publications. Much
previously unpublished material and several tabulations
prepared especially for this series are presented here.
Furthermore, much of the data are presented for both
1971 and 1961, using a consistent set of 1971 urban area
definitions. Although Statistics Canada publishes most
of its data in raw form, the data in this series are usually
transformed to percentages and other types of summary
indexes which may be more useful to the average user.

The three volumes of this data handbook series
will not meet all the data needs of everyone concerned
with urban Canada, nor are they intended as a review of
past attempts at solving urban problems. Rather, the
primary purpose of this series is to consolidate in a
convenient form a judicious selection of the wide array
of data required for the intelligent diagnosis, analysis
and solutions of the problems of urban and metropolitan
Canada.

1 Metropolitan growth in Canada

1.1 A metropolitan nation

Canada has become a metropolitan nation. There is little doubt that Canada ranks among the most metropolitan countries by world standards, although differences in the manner in which countries define their metropolitan areas preclude rigorous international comparison. In 1971, 55.1 percent of the population lived in "Metropolitan Canada", the 22 Census Metropolitan Areas (CMAs) defined by Statistics Canada.[1] An even higher percentage of Canada's income, decision-making power, manufacturing output, wholesale and retail trade and financial industries are concentrated in the metropolitan portions of the country.

The metropolitan area concept must be clearly understood at the outset, since the results of any analysis of metropolitan data are highly sensitive to the manner in which metropolitan areas are bounded. Furthermore, studies of change are especially vulnerable to problems associated with boundary changes from one census to another. For this reason, special effort was expended in this volume to present 1961 data which were tabulated consistently on the basis of 1971 definitions of CMAs. A CMA, in Statistics Canada's terminology, is the main labour market area of a continuous built-up area having 100,000 or more population. The main labour market area corresponds to a commuting field where a significant number of people are able to travel daily to work in the main built-up area.[2] The component municipalities of the 22 CMAs so delimited in 1971 are listed in Table A1.1.

Admittedly, the population threshold of 100,000 is an arbitrary figure for assigning "metropolitan" status to an urban area; other nations use other thresholds. In Canada, however, an urban area of 100,000 people usually assumes major regional importance, serving as the dominant centre for higher order goods and services over a wide region, as seen in the last chapter of Volume 1. Cities over 100,000 are large enough to acquire a number of functions identified in Volume I as distinctly metropolitan, even though they may occasionally be found in smaller centres. As the 100,000 mark is reached, the importance of neighbourhood differences also increases, even though neighbourhoods in smaller cities also vary in the characteristics of their population. Nevertheless, the 100,000 mark is little more than a convenient break point in what really is an urban-size continuum. In Canada, this figure yields enough metropolitan areas to permit intermetropolitan comparisons and analyses, while their numbers are not so great as to preclude fairly detailed tabulations in a volume of moderate size which encompasses all metropolitan areas in the country.

Metropolitan areas are in turn divided into census tracts of about 5,000 population, delimited in such a way as to be relatively homogeneous in their population characteristics. Rather loosely speaking, census tracts are often referred to in this volume as neighbourhoods,

notwithstanding the greater sociological significance of the latter term. Census tract boundaries always respect municipal boundaries. In other words, a single census tract never contains areas in more than one municipality, while large municipalities are divided into a number of census tracts. Census tracts have been defined for all CMAs except Chicoutimi-Jonquière which fails to meet Statistics Canada's requirement that the largest city have a population of 50,000 for census tracts to be delimited. Statistics Canada also has defined census tracts in several cities over 50,000 which are not part of a CMA, but these cities are not included in this volume.

This volume serves as an introduction to the detailed data provided in Volume III for each of the 2,267 census tracts in Metropolitan Canada. Chapter 1 provides a review of growth trends in metropolitan areas since 1951, and examines differences among them in the demographic components of their recent population growth.

Chapter 2 provides a framework for studying neighbourhood differences described by the wealth of data on population and housing characteristics in Volume III. The chapter addresses the question of why neighbourhoods differ in particular characteristics of their population.

Chapters 3, 4 and 5 share a similar structure. All three begin with a review of metropolitan differences in the particular set of population characteristics examined in each chapter: data relating to the family life cycle in Chapter 3, data on family income levels in Chapter 4 and data on the ethnic and cultural characteristics of the population in Chapter 5. Each of these chapters compares metropolitan areas in their levels of segregation according to these characteristics. Each concludes with a survey of the spatial patterns displayed by each of these basic dimensions of neighbourhood differences.

Chapter 6 focuses on the interrelationships among the neighbourhood characteristics examined individually in the previous three chapters.

1.2 Metropolitan growth differentials

Table 1.1 presents some very basic comparisons of rates of population growth in Metropolitan and Nonmetropolitan Canada. Between 1951 and 1971, Metropolitan Canada nearly doubled in population. Each census since 1951 has found an increasing proportion of Canada's population living in metropolitan areas. Although the nonmetropolitan population increased in absolute numbers in each census, the metropolitan population has grown approximately three times as fast as the nonmetropolitan. Metropoli-

tan Canada typically accounts for three-quarters of Canada's population increment.

The rate of metropolitan population growth, however, has been declining. As Canada entered the seventies, her metropolitan areas were growing at only half the rate at which they had grown in the early fifties. Even in absolute numbers, the population increment in Metropolitan Canada between 1966 and 1971 was substantially lower than in each of the earlier five-year periods since 1951, partially because of declining birth rates. Furthermore, latest estimates suggest that the percentage of Canada's population living in metropolitan areas peaked in 1972 (55.2 percent) and had fallen to 55.0 percent by 1974.[3] Whether this turning point represents the beginning of a trend away from metropolitan areas or simply a spill-over of population just beyond 1971 CMA boundaries will not be known until the 1976 census returns are tabulated.

Canada's 22 CMAs have not shared equally in the rapid population growth which has characterized Metropolitan Canada as a whole throughout most of this century.[4] Table 1.2 documents the population growth record of each metropolitan area since 1951, using the 1971 definitions of CMAs. The trend towards metropolitan concentration in Canada has been so strong and pervasive that no metropolitan area has experienced an

absolute decline in population during any five-year intercensal period since 1951. In fact, very few metropolitan areas have grown at slower rates than the country as a whole. Only Saint John and Windsor failed to exceed the national rate of population growth between 1951 and 1961. In the ensuing decade from 1961 to 1971, however, six metropolitan areas fell below the national growth rate: Chicoutimi-Jonquière, Saint John, Thunder Bay, Winnipeg, Halifax and St. Catharines-Niagara.

As noted earlier, the 1950s was a decade of very rapid metropolitan growth indeed. Five metropolitan areas grew by more than 50 percent in these ten years. No metropolitan area achieved a growth rate in excess of 50 percent between 1961 and 1971, however, and only two metropolitan areas, Kitchener and Windsor, grew faster in the sixties than in the fifties. Most also grew faster in the early sixties than later in the decade.

The explanation of these differences in metropolitan growth rates is exceedingly complex. A metropolitan area's population growth partially responds to the relative performance of its urban economy, which in turn depends partly upon whether the city's industries are in the rapidly growing, stable or declining sectors of the national economy. Industries of the same type, however, grow in some cities and decline in others. In other words, a city's ability to attract a substantial share of the country's growth or decline in each industry also determines the relative growth in its labour force, and hence in its population. The relationship between employment and population change is further complicated by the fact that responses to changing labour demands may be met by changes in labour force participation rates, by in- and out-migration, or by commuting. Noneconomic factors that influence migration and city differences in fertility rates must also be added to the explanation of metropolitan growth differentials.

There are, of course, a great many characteristics associated with a city's growth rate. One of the most obvious is the age of a city's housing stock, which depends largely upon the timing of its growth since first settlement. A city with rapid postwar growth, for example, may be expected to have a high proportion of relatively new dwellings. Table 1.3 shows the age of the housing stock in each CMA in 1971. Metropolitan Canada has grown so rapidly that almost two-thirds of the occupied dwellings had been built since World War II. Fifteen percent of the homes, however, were more than 50 years old. The proportion of postwar dwellings and very old homes varies from city to city. In 1971, more than 80 percent of the dwellings in Calgary and Edmonton were less than 25 years old, whereas in Saint John nearly two-fifths were over 50 years old. Such differences have obvious implications for cities' needs

Table 1.1 Population growth of Metropolitan and Nonmetropolitan Canada, 1951-71*

Characteristic	Metropolitan	Non-metropolitan	Total
Population			
1951	6,397,680	7,611,749	14,009,429
1956	7,747,301	8,333,490	16,080,791
1961	9,291,305	8,946,942	18,238,247
1966	10,684,482	9,330,398	20,014,880
1971	11,874,748	9,693,563	21,568,311
Percent of Canada's population:			
1951	45.7	54.3	100.0
1956	48.2	51.8	100.0
1961	50.9	49.1	100.0
1966	53.4	46.6	100.0
1971	55.1	44.9	100.0
Population growth rate (%):			
1951-1956	21.1	9.5	14.8
1956-1961	19.9	7.4	13.4
1961-1966	15.0	4.3	9.7
1966-1971	11.1	3.9	7.8
1951-1961	45.2	17.5	30.2
1961-1971	27.8	8.3	18.3
1951-1971	85.6	27.4	54.0
Percent of Canada's population growth:			
1951-1956	65.2	34.8	100.0
1956-1961	71.6	28.4	100.0
1961-1966	78.4	21.6	100.0
1966-1971	76.6	23.4	100.0
1951-1961	68.4	31.6	100.0
1961-1971	77.6	22.4	100.0
1951-1971	72.5	27.5	100.0

* All populations and growth rates are on the basis of 1971 CMA boundaries.

Canada Statistics Canada, *1971 Census of Canada: Population: Census Subdivisions (Historical)*, Bulletin 1.1-2, Cat. No. 92-702 (Ottawa: Information Canada, 1973).

Sources:
Canada, Statistics Canada, Census Division, "Population by census metropolitan areas", revised (July 1973);

for rejuvenation of ... neighbourhoods, and for the ... demand ... housing in general.

1.3   The demographic components of metropolitan growth 1966-71

... causes" or components of metropolitan ... Any national urban growth policy will have to ... differences in the compo- ... of population change in each city, since each ... set of policy con- ... es" of population ... stations of more ... circumstances and ... ition of popula- ... nue is an essential step towards the understand-

ing of recent trends. The tables in this section are directed towards this purpose.

Once the problem of changing metropolitan area definitions has been resolved as it was for Tables 1.1 and 1.2, the demographic components of population change consist of

a) natural increase, which is the difference between the number of births and the number of deaths; and

b) net migration, which is the difference between the number of in-migrants and the number of out-migrants.

The in-migrant and out-migrant streams may again be subdivided in a number of ways on the basis of their origin or destination, e.g., international and internal migrants; inter- and intraprovincial migrants; intermetropolitan migrants and those moving between

							Growth Rate			
					1956	1951	1961-71	1966-71	1961-66	1951-61
					201,022	142,315	44.5	22.0	18.5	96.1
	...ere	135,703	132,954	127,616	110,317	91,161	4.8	0.6	4.2	40.0
		495,702	425,470	359,821	275,182	193,622	37.8	16.5	18.2	85.8
					130,481	138,427	15.1	6.1	8.6	39.7
			457,410	401,071	341,513	281,901	24.3	9.0	14.0	42.3
:hener		226,846	192,275	154,864	128,722	107,474	46.5	18.0	24.2	44.1
		286,011	253,701	226,669	196,338	167,724	26.2	12.7	11.9	35.1
			2,570,982	2,215,627	1,830,232	1,539,308	23.8	6.7	16.0	43.9
...uti		602,510	528,774	457,038	367,756	311,587	31.8	13.9	15.7	46.7
		480,502	436,918	379,067	328,405	289,294	26.8	10.0	15.3	31.0
		140,734	132,432	113,749	91,215	72,731	23.7	6.3	16.4	56.4
	Niagara	303,429	285,453	257,796	233,034	189,046	17.7	6.3	10.7	36.4
...		131,814	117,533	106,666	92,565	79,756	23.6	12.2	10.2	33.7
			104,195	98,083	88,375	80,689	8.8	2.4	6.2	21.6
...katoon		126,449	115,900	95,564	72,930	55,679	32.3	9.1	21.3	71.6
Sudbury		155,424	136,739	127,446	107,889	80,543	22.0	13.7	7.3	58.2
Thunder Bay		112,093	108,035	102,085	87,624	73,713	9.8	3.8	5.8	38.5
		...601...	2,289,900	1,919,409	1,571,982	1,261,861	36.9	14.8	19.3	52.1
Vancouver		1,082,352	933,091	826,798	694,425	586,172	30.9	16.0	12.9	41.1
Victoria		195,800	175,262	155,763	136,127	114,829	25.7	11.7	12.5	35.6
Windsor		258,643	238,323	217,215	208,456	182,619	19.1	8.5	9.7	18.9
Winnipeg		540,262	508,759	476,543	412,741	357,229	13.4	6.2	6.8	33.4
Metropolitan Canada		13,874,748	10,684,482	9,291,305	7,747,301	6,397,680	27.8	11.1	15.0	45.2
Non-metropolitan Canada		9,693,563	9,330,398	8,946,942	8,333,490	7,611,749	8.3	3.9	4.3	17.5
Canada		23,568,311	20,014,880	18,238,247	16,080,791	14,009,429	18.3	7.8	9.7	30.2

All populations and growth rates are on the basis of 1971 CMA boundaries.

Sources:
Canada, Statistics Canada, Census Division. "Population by census metropolitan areas", revised, (July, 1973);

Canada, Statistics Canada, 1971 Census of Canada: Population: Census Subdivisions (Historical), Bulletin 1.1-2, Cat. No. 92-702 (Ottawa: Information Canada, 1973).

metropolitan and nonmetropolitan areas. Differences in the age and sex composition of the in-migrant, out-migrant and non-migrant population in turn influence the rate of natural increase in each metropolitan area.

Natural increase accounted for about one-half the population increase in Metropolitan Canada between 1966 and 1971 (Table 1.4). One of the outstanding facts about metropolitan population growth in Canada is that immigration from other countries accounted for much of the remainder of the population increment in Metropolitan Canada between 1966 and 1971. Nearly 6 percent of the population of Metropolitan Canada in 1971 had lived outside the country in 1966. Internal migration is a relatively minor component of metropolitan population growth in Canada.

The relative contribution of natural increase, internal migration and international migration to popu-

Table 1.3 Occupied dwellings by period of construction, Census Metropolitan Areas, 1971*

Census Metropolitan Area	Occupied dwellings	Period of construction (%)			
		1920 or before	1921-45	1946-60	1961-71 †
Calgary	121,100	9.4	10.3	40.6	39.7
Chicoutimi-Jonquière	29,700	11.9	24.9	40.4	22.8
Edmonton	144,505	6.2	11.7	41.2	40.9
Halifax	59,505	17.5	17.3	32.8	32.4
Hamilton	146,255	20.3	17.2	34.1	28.4
Kitchener	66,570	19.3	13.6	29.9	37.2
London	87,160	25.1	14.3	29.7	30.9
Montréal	805,435	14.9	16.2	36.4	32.4
Ottawa-Hull	170,015	15.0	13.8	33.9	37.4
Québec	127,240	18.9	16.3	29.6	35.2
Regina	42,585	10.7	19.8	35.9	33.7
St. Catharines-Niagara	88,885	20.5	21.3	35.8	22.4
St. John's	29,635	18.4	17.7	32.2	31.6
Saint John	28,645	37.9	15.8	23.9	22.4
Saskatoon	38,610	9.5	18.2	35.0	37.3
Sudbury	39,415	9.1	21.4	41.4	28.1
Thunder Bay	32,245	18.0	26.4	35.3	20.2
Toronto	773,830	14.2	16.5	35.3	34.0
Vancouver	345,870	9.4	21.4	35.5	33.7
Victoria	66,255	16.2	20.0	32.9	30.9
Windsor	74,090	18.5	30.6	31.6	19.3
Winnipeg	166,220	20.1	21.4	33.4	25.1
Metropolitan Canada	**3,483,770**	**15.0**	**17.3**	**35.2**	**32.6**
Nonmetropolitan Canada	**2,547,035**	**26.8**	**19.1**	**30.4**	**23.7**
Canada	**6,030,805**	**19.9**	**18.1**	**33.2**	**28.8**

* Data in this table include only private occupied dwellings. Hotels, large lodging houses, institutions, camps and other such collective dwellings are excluded. A dwelling refers to a structurally separate set of living quarters with a private entrance from outside or from a common hallway or stairway inside the building. In other words, the entrance must not be through someone else's living quarters.

† Includes the first five months only of 1971.

Source:
Canada, Statistics Canada, *1971 Census of Canada: Housing: Period of Construction and Length of Occupancy*, Bulletin 2.3-6, Cat. No. 93-731 (Ottawa: Information Canada, 1973).

lation growth, however, varies markedly among metropolitan areas. Even the rates of natural increase are far from uniform, as shown in Table 1.5. In 1971, for example, Metropolitan Canada grew by 0.9 percent from natural increase, while the rate of natural increase in individual metropolitan areas ranged from 1.7 percent in Sudbury to a slight natural decrease (-0.02 percent) in Victoria. Metropolitan differences in natural increase are primarily related to age differences in their populations, although city differences in age-specific fertility rates persist.

Data from the 1971 census enable the calculation of the amount of gain or loss which each metropolitan area experienced between 1966 and 1971 as a result of migration within Canada. Each person over 14 years of age in the one-third sample of households receiving the long-form census questionnaire was asked to state his or her municipality of residence as of June 1, 1966. The migration of persons aged 5 to 14 was assumed to be the same as that of the family head, or of the household head in the case of nonfamily persons. There are, of course, many problems peculiar to migration data derived from a question of this type. The most serious problem arises from response error, but municipal boundary changes are also serious.[5] For Canada as a whole, 1.6 percent of the population aged 5 and over who reported they had lived in a different municipality in Canada in 1966 failed to state the municipality's name. These persons then, are known to be in-migrants to their 1971 municipality of residence, but could not be allocated as out-migrants from particular municipalities of residence in 1966. Insofar as most metropolitan areas are concerned, some of these in-migrants from unstated origins would have moved from another municipality within the same CMA, and are not actually in-migrants to the CMA. In presenting the data in this chapter, therefore, migrants whose municipality of residence in 1966 was not stated were excluded from the in-migrant total. This procedure enables a better comparison with the number of out-migrants and a more accurate estimate of net internal migration.

Even the estimates of net migration derived by excluding migrants of unstated residence in 1966 must be viewed very cautiously. When stating their 1966 municipality of residence on their 1971 census questionnaires, an unknown number of people improperly substituted the name of a nearby large municipality. This response bias unduly inflates the estimates of out-migration to varying degrees in different CMAs. Even at the CMA level, therefore, estimates of out-migration, and hence, of net migration, may contain substantial error. In certain instances, this error may be large enough to reverse the sign of the estimate of net migration. The 1971 census data provide only one estimate of net migration for particular cities and for Metropolitan Canada as a whole. The serious researcher is

well advised to derive alternative estimates of net migration by the vital statistics method, before accepting the reliability of the 1971 census migration data. The data presented in Tables 1.4 and 1.6, therefore, should be interpreted as but one indication of the volume and direction of migration in Canada between 1966 and 1971. More intensive research may uncover serious errors in the data. In the ensuing discussion, however, the data are assumed to be reasonably accurate.

Table 1.6 suggests that ten of Canada's 22 CMAs experienced a net loss from their migration exchange with the rest of Canada between 1966 and 1971. In only one instance, however, (Chicoutimi-Jonquière) did this loss amount to over 2 percent of the 1966 CMA population. Of the 12 CMAs with a net gain from internal migration, Calgary had the highest net migration ratio, approaching 8 percent of its 1966 population. The net migration ratios in Victoria, Ottawa-Hull and Vancouver also reached at least the 5 percent level. In absolute numbers, Calgary, Edmonton, Ottawa-Hull, Québec, Vancouver and Victoria each experienced a net gain of more than 10,000 persons from migration from within Canada.

Many Canadians will be surprised to learn that both Toronto and Montréal CMAs apparently experienced a net loss of migrants to the rest of Canada, amounting in the case of Toronto to 20,000 persons. In absolute numbers, Toronto's loss was the highest of all the CMAs. Winnipeg's loss ranked second and Montréal's third, in absolute numbers of persons.

Immigration from outside Canada was also an important component of metropolitan growth in Canada, but its importance varied a great deal among cities. Toronto's net loss of migrants to the rest of

Table 1.4 Components of population, Metropolitan and Nonmetropolitan Canada, 1966-71

	Metropolitan (,000)	Nonmetropolitan (,000)	Canada (,000)
Population, 1966 (1971 boundaries)	10,684	9,330	20,015
Net internal migration, 1966-71*	121	−121	—
Natural increase, 1966-71†	588	499	1,087
Immigration, 1966-71‡	666	158	824
Residual§	−184	−172	−358
Population, 1971	11,875	9,694	21,568

* Net migration of population aged five and over (in 1971) between metropolitan and nonmetropolitan areas in Canada.

† Canada's natural increase for 1966-70 was allocated to metropolitan and nonmetropolitan areas of Canada in the same proportions as applied to 1971 data.

‡ Includes Canadian-born living abroad in 1966 but in Canada in 1971, and immigrants aged five and over in 1971 living outside Canada in 1966 but in Canada in 1971.

§ Includes emigration of those living in Canada in 1966; net internal migration of those born after June 1, 1966; immigrants born after June 1, 1966, residing in Canada in 1971; net migration of those whose municipality of residence in 1966 was not stated; and residual error.

Sources:
Table 1.1;

Canada, Statistics Canada, *1971 Census of Canada: Population: Internal Migration*, Bulletin 1.2-7, Cat. No. 92-719 (Ottawa: Information Canada, 1974).

Canada, Statistics Canada, *1971 Census of Canada: Population: Characteristics of Migrants in Census Metropolitan Areas*, Bulletin 1.5-6, Cat. No. 92-746 (Ottawa: Information Canada, 1974).

Canada, Statistics Canada, *Vital Statistics: Volume I—Births: 1971*, Cat. No. 84-204 (Ottawa: Information Canada, 1974).

Table 1.5 Birth and death rates, Census Metropolitan Areas, 1971*

Census Metropolitan Area	Live births per 1,000 population	Deaths per 1,000 population	Rate of natural increase per 1,000 population
Calgary	19.0	6.1	12.9
Chicoutimi-Jonquière	15.3	5.1	10.2
Edmonton	19.5	5.6	13.9
Halifax	19.3 (a)	6.5 (a)	12.7(a)
Hamilton	15.4	7.0	8.4
Kitchener	19.4	6.0	13.4
London	17.1	7.6	9.5
Montréal	14.1	6.9	7.2
Ottawa-Hull	16.3	6.3	10.0
Québec	16.4	6.8	9.6
Regina	20.2	6.4	13.8
St. Catharines-Niagara	15.9	7.4	8.5
St. John's	22.0 (a)	6.6 (a)	15.4(a)
Saint John	19.1	8.9	10.2
Saskatoon	19.5	7.3	12.3
Sudbury	22.4	5.6	16.8
Thunder Bay	17.5	8.9	8.6
Toronto	17.2	6.4	10.8
Vancouver	13.8	8.6	5.2
Victoria	11.7 (a)	11.9 (a)	−0.2(a)
Windsor	18.0	8.0	10.1
Winnipeg	17.2	8.1	9.1
Metropolitan Canada	**16.3**	**7.0**	**9.3**
Nonmetropolitan Canada	**17.4**	**7.7**	**9.7**
Canada	**16.8**	**7.3**	**9.5**

* Vital statistics are not available for very small municipalities and unorganized areas. Therefore, the population included in the area for which births and deaths are recorded does not always correspond exactly to the CMA. Where more than 10 percent of a CMA's population was excluded from the area for which births and deaths were published, this has been indicated by the letter (a). Only 1.3 percent of metropolitan Canada's population was excluded from the area for which births and deaths were published. In all cases, however, the population of the area for which births and deaths are recorded was used as the base population in calculating rates. The source publication failed to note that the birth and death data do not always apply to the entire CMA and the rates calculated therein are therefore incorrect. For this reason, the data in this table differ from the data in the source publication for a number of CMA's.

Births and deaths are attributed to the place of residence of the mother and of the deceased, respectively, rather than to the place of occurrence.

Source:
Canada, Statistics Canada, *Vital Statistics: Volume I—Births: 1971*, Cat. No. 84-204 (Ottawa: Information Canada, 1974).

Canada was far more than offset by its attraction of foreign immigrants. In 1971 the Toronto CMA had some 262,000 persons who lived outside the country in 1966. Most of these were foreign-born although nearly 20,000 were repatriated Canadians. From the immigration ratios included in Table 1.6, Toronto appeared to depend most heavily on immigration from abroad. However, in 1971, residents who were living outside the country in 1966 also amounted to at least 5 percent of the 1966 population in Kitchener, Vancouver, Calgary, London, Hamilton, Windsor, Ottawa-Hull and Edmonton.

Canada also experiences emigration. Between 1961 and 1971, for example, an estimated 802,000 persons left the country.[6] The Canadian census data do not permit the allocation of emigrants directly to particular metropolitan areas, since they are no longer in the country to be enumerated in a subsequent census. Even if the immigration ratios shown in Table 1.6 were reduced to adjust for emigration, net immigration from abroad would still amount to more than net internal migration in most CMAs.[7]

Table 1.7 shows intermetropolitan migration, and Table A1.2 shows the origins and destinations of internal and international migrants affecting Metropolitan Canada between 1966 and 1971. Even in terms of the broad geographical categories shown in Table A1.2, the metropolitan areas of Canada are highly differentiated by their migrant origins and destinations. Toronto and Montréal, for example, exhibited a very different pattern, although both had a net loss of migrants to the rest of the country between 1966 and 1971. Toronto had a net gain of nearly 11,000 from the rest of Metropolitan Canada, while Montréal had a net loss of almost 34,000

Table 1.6 Internal migration and immigration ratios, Census Metropolitan Areas, 1966 to 1971

Census Metropolitan Area	In-migrants from the rest of Canada†	Out-migrants to the rest of Canada‡	Net migration with respect to the rest of Canada§	In-migration ratio¶	Out-migration ratio**	Net migration ratio††	Immigration ratio ‡‡
Calgary	78,410	52,645	25,765	21.4	15.9	7.8	7.3
Chicoutimi-Jonquière	10,535	15,720	−5,185	8.5	11.8	−3.9	1.0
Edmonton	80,450	66,065	14,385	17.9	15.5	3.4	5.1
Halifax	32,605	36,310	−3,705	16.1	17.3	−1.8	2.9
Hamilton	45,755	39,390	6,365	10.0	8.6	1.4	5.8
Kitchener	32,890	25,275	7,615	15.9	13.1	4.0	7.9
London	42,565	35,065	7,500	16.2	13.8	3.0	5.9
Montréal	160,390	167,655	−7,265	6.3	6.5	−0.3	4.5
Ottawa-Hull	85,560	57,635	27,925	15.5	10.9	5.3	5.2
Québec	52,150	33,650	18,500	11.8	7.7	4.2	1.4
Regina	25,465	27,595	−2,130	19.0	20.8	−1.6	2.3
St. Catharines-Niagara	23,245	24,840	−1,595	8.3	8.7	−0.6	3.8
St. John's	14,435	12,980	1,455	12.1	11.0	1.2	1.7
Saint John	9,850	10,445	−595	10.1	10.0	−0.6	1.3
Saskatoon	27,240	28,065	−825	23.6	24.2	−0.7	2.9
Sudbury	22,825	19,145	3,680	16.2	14.0	2.7	3.2
Thunder Bay	10,620	10,470	150	10.3	9.7	0.1	2.7
Toronto	185,530	205,655	−20,125	8.5	9.0	−0.9	11.5
Vancouver	131,555	85,105	46,450	13.1	9.1	5.0	7.7
Victoria	35,650	22,985	12,665	19.5	13.1	7.2	4.9
Windsor	18,600	19,535	−935	7.9	8.2	−0.4	5.6
Winnipeg	58,590	67,455	−8,865	11.8	13.3	−1.7	4.7

* Based on the residence of the population aged five and over (1971) on June 1, 1966 and 1971. The migration of persons aged five to 14 was assumed to be the same as that of the family head (or the household head for a non-family person). Canadian residents stationed abroad in the armed forces or in the diplomatic service are excluded from the data.

† Persons who stated in 1971 that they had resided in a municipality not included but outside the 1971 CMA boundary in 1966.

‡ Persons who stated in 1971 that they had resided in a municipality included in the 1971 CMA in 1966, and resided outside that CMA but within Canada in 1971.

§ In-migrants from the rest of Canada minus out-migrants to the rest of Canada.

¶ (In-migrants from the rest of Canada)/(Population aged 5 and over in 1971) X 100.

** (Out-migrants to the rest of Canada)/(Population aged 5 and over according to 1971 boundaries) X 100.

†† (Net migration with respect to the rest of Canada)/(Population in 1966 according to 1971 boundaries) X 100.

‡‡ (Persons living outside Canada in 1966)/(Population in 1966 according to 1971 boundaries) X 100.

Source:
Canada, Statistics Canada, 1971 Census of Canada: Population: Characteristics of Migrants in Census Metropolitan Areas, Bulletin 1.5-6, Cat. No. 92-746 (Ottawa: Information Canada, 1974)

to other metropolitan areas. Toronto suffered a net loss of 45,000 persons to the rest of Ontario (both to other metropolitan areas and to nonmetropolitan areas) while Montréal gained 38,000 from the rest of Québec province, both metropolitan and nonmetropolitan. Toronto gained from other provinces, while Montréal lost to other provinces. In fact, the only features which the migration experience of Toronto and Montréal shared (at least in the broad categories of origin and destination shown here) were that both had a net loss to the rest of Canada and that both attracted large numbers of immigrants from abroad. Even in this respect, however, they [were not] identical, since the immigration ratio of [Toronto was] times as high as Montréal's.

[...] migration experience between 1966 [...] may not be typical of its recent [...] census years, exceptional circum-

stances prevailed. In 1966 Montréal was preparing for Expo, and the excessive demand for labour attracted many to that city, if only on a temporary basis. The political crisis in Montréal in October 1970, on the other hand, probably suppressed the rate of in-migration, particularly from outside the province, and stimulated the rate of out-migration. Other cities also experience annual fluctuations in their local economies. Five-year rates of migration, therefore, must always be interpreted in the light of the timing of local swings in the business cycle.

Vancouver represents another type of migration pattern. Between 1966 and 1971, Vancouver's net gain of 46,000 migrants from the rest of the country was the highest of all the metropolitan areas. Vancouver gained from every other metropolitan area and from the nonmetropolitan areas outside British Columbia, but

Census Metropolitan Area of residence, 1971

			Edmonton	Halifax	Hamilton	Kitchener	London	Montréal	Ottawa-Hull	Québec	Regina
		—	7,575	255	340	205	320	850	890	85	725
		100	55	5	25	10	4,005	465	3,200	5	
		10	—	350	280	140	405	895	1,270	50	480
		50	485	—	580	320	500	1,815	2,640	175	55
		20	365	300	—	1,630	1,700	1,000	1,095	15	65
		10	165	100	1,220	—	1,275	380	590	30	25
		0	330	255	1,240	1,450	—	790	1,105	40	75
	2,400	1,815	1,790	2,240	2,670	1,270	1,700	—	12,935	9,475	230
	1,100	270	1,300	1,100	1,080	570	1,305	6,005	—	1,125	225
	130	1,185	155	260	110	60	85	11,765	2,025	—	10
		5	2,235	75	235	115	160	190	735	10	—
	295	10	195	240	2,485	1,030	1,210	655	785	30	45
St. John's	115	10	110	660	205	330	210	630	455	100	50
Saint John	140	—	85	855	135	35	115	340	270	5	15
Saskatoon	2,910	5	2,630	45	135	75	125	350	500	20	2,135
Sudbury	155	15	165	60	680	330	450	350	1,090	40	55
Thunder Bay	375	—	215	45	235	190	190	140	155	5	35
Toronto	3,050	85	2,465	2,295	12,100	6,245	8,560	9,435	8,870	380	530
		35	2,830	370	510	295	385	2,245	1,665	70	670
Victoria	965	15	610	605	70	45	115	245	910	30	205
Windsor	175	—	180	105	730	455	2,085	395	515	40	20
Winnipeg	4,590	90	3,445	480	840	400	655	2,440	2,515	335	1,350
Total	36,128	3,620	28,430	10,750	25,885	15,215	21,560	44,920	41,480	15,260	7,005
Net inter-metropolitan migration	10,095	−4,880	−3,475	−5,025	4,675	4,340	4,510	−33,965	11,420	−1,890	−8,995

* Based on the residence of the population aged five and over (1971) on June 1, 1966 and 1971. The migration of persons aged five to 14 was assumed to be the same as that of the family head for the household

head for a non-family person). Canadian residents stationed abroad in the armed forces or the diplomatic service are excluded from the data. Because entries in this table are independently rounded, rows and columns may not add to totals.

Source:
Unpublished tabulation prepared by Statistics Canada from 1971 census.

lost 8,000 migrants to the nonmetropolitan parts of the province.

Other types of migration experience are also represented. Regina and Saskatoon, for example, showed strong gains from the nonmetropolitan parts of Saskatchewan, but these gains were more than off-set by losses to the rest of the country, both metropolitan and nonmetropolitan. Edmonton lost to Calgary and to the rest of Metropolitan Canada (as a whole), but gained from nonmetropolitan areas in Alberta and elsewhere. Calgary, Hamilton, Kitchener, London and Ottawa-Hull gained from all sources: metropolitan and nonmetropolitan areas in the same province and in different provinces. Chicoutimi-Jonquière, Halifax, Saint John, St. John's, Thunder Bay, Saskatoon and Winnipeg gained only from the nonmetropolitan parts of their own provinces.

Hence, metropolitan growth in Canada is not simply the result of natural increase, nor of migration from nonmetropolitan areas, nor of foreign immigration. The components of growth vary from city to city—sometimes reinforcing each other, sometimes working at cross purposes. Urban growth policies must recognize the complexity of the demographic processes responsible for the growth differentials in Metropolitan Canada, if the components of growth are to be manipulated towards a better urban future.

Table 1.7 *(Concluded)*

St. Catharines-Niagara	St. John's	Saint John	Saskatoon	Sudbury	Thunder Bay	Toronto	Vancouver	Victoria	Windsor	Winnipeg	Total
120	85	50	680	110	85	2,300	7,565	2,065	105	1,620	26,030
30	10	15	10	20	5	225	75	5	35	150	8,500
125	70	50	820	65	115	2,365	9,390	2,470	170	1,780	31,905
230	370	715	65	245	60	3,510	1,055	1,390	290	595	15,775
1,840	65	165	80	460	225	8,775	1,370	295	745	545	21,210
515	110	10	5	285	110	4,535	490	95	280	285	10,875
635	60	60	65	370	185	6,725	1,025	200	1,515	460	17,050
1,200	485	660	255	990	290	25,315	8,970	1,085	1,100	2,010	78,885
580	235	140	165	890	190	8,440	3,025	900	400	1,015	30,060
75	10	70	—	45	—	740	230	100	20	75	17,150
65	40	25	2,035	75	65	990	2,615	695	80	2,015	16,000
—	10	100	45	810	135	5,555	650	85	490	335	14,695
65	—	100	25	130	—	2,805	230	150	65	145	6,590
75	30	—	15	75	20	1,120	250	60	45	75	3,760
50	15	5	—	115	135	920	2,590	830	75	1,345	15,010
780	45	10	75	—	135	3,355	335	55	370	230	8,780
210	20	30	85	215	—	1,280	770	240	170	1,065	5,670
4,695	920	780	485	2,730	1,185	—	11,635	1,585	3,420	3,345	84,795
245	55	80	550	165	140	6,030	—	5,310	195	2,170	28,625
25	40	35	185	30	30	675	6,005	—	45	390	11,275
385	40	35	15	335	120	4,005	520	60	—	185	10,400
395	15	90	995	145	820	5,670	10,435	2,095	275	—	38,075
12,340	**2,730**	**3,225**	**6,655**	**7,805**	**4,050**	**95,335**	**69,230**	**19,770**	**9,890**	**19,835**	**501,115**
−2,355	**−3,860**	**−535**	**−8,355**	**−975**	**−1,620**	**10,540**	**40,605**	**8,495**	**−510**	**−18,240**	**—**

Table A1.1 Components of Census Metropolitan Areas, 1971

Census Metropolitan Area	Components	Population
Calgary, Alberta	Calgary, c.	403,319
Chicoutimi-Jonquière, Québec	Chicoutimi, c.	33,893
	Arvida, c	18,448
	Chicoutimi - Nord, c.	14,086
	Jonquière, c.	28,430
	Kénogami, c.	10,970
	...gotville, t.	6,041
		9,228
		4,393
		39
	...Vianney, vl.	184
	...e, mun.	3,420
		3,121
	... mun.	1,450
		438,152
		5,726
		1,475
		11,800
		332
		551
Halifax, Nova Scotia	Halifax, c.	122,035
	Windsor Junction Subdivision D- Halifax-Dartmouth:	16.846
	a) Bedford and Waverly Area	6,178
	b) Cole Harbour and Eastern Passage Area	7,428
		1,640
	d) North Dartmouth Area	3,738
	Indian Reserves (Subd D)	2
Hamilton, Ontario	Hamilton, c.	309,173
	Burlington, t.	87,023
	Dundas, t.	17,208
	Grimsby, t.	15.770
	Stoney Creek, t.	8,380
	Waterdown, vl.	2,146
	Ancaster, twp.	15,326
	Binbrook, twp.	3,826
	Flamborough, East, twp.	5,980
	Flamborough, West, twp.	8,588
	Glanford, twp.	6,110
	Saltfleet, twp.	18,993

Table A1.1 *(Continued)*

Census Metropolitan Area	Components	Population
Kitchener, Ontario	Kitchener, c.	111,804
	Galt, c.	38,897
	Waterloo, c.	36,677
	Hespeler, t.	6,343
	Preston, t.	16,723
	Ayr, vl.	1,272
	Bridgeport, vl.	2,375
	Dumfries, North, twp.	4,022
	Waterloo, twp.	8,733
London, Ontario	London, c.	223,222
	St. Thomas, c.	25,545
	Port Stanley, vl.	1,725
	Dorchester, North, twp.	6,382
	London, twp.	5,995
	Nissouri, West, twp.	3,207
	Southwold, twp.	4,478
	Westminster, twp.	6,634
	Yarmouth, twp.	8,823
Montréal, Québec	Montréal, c.	1,214,352
	Beauharnois, c.	8,121
	Beaconsfield, c.	19,389
	Chambly, c.	11,469
	Côte-St-Luc, c.	24,375
	Deux-Montagnes, c.	8,631
	Dorval, c.	20,469
	Lachine, c.	44,423
	Laflèche, c.	15,113
	La Salle, c.	72,912
	Laval, c.	228,010
	Longueuil, c.	97,590
	Montréal - Nord, c.	89,139
	Outremont, c.	28,552
	Pierrefonds, c.	33,010
	Pointe-aux-Trembles, c.	35,567
	Pointe-Claire, c.	27,303
	St-Lambert, c.	18,616
	St-Laurent, c.	62,955
	St-Léonard, c.	52,040
	Ste-Thérèse, c.	17,175
	Verdun, c.	74,718
	Westmount, c.	23,606
	Anjou, t.	33,886
	Baie-d'Urfé, t.	3,881
	Beloeil, t.	12,274
	Blainville, t.	9,630
	Brossard, t.	23,452
	Boucherville, t.	19,997
	Candiac, t.	5,185
	Carignan, t.	3,340
	Charlemagne, t.	4,111
	Châteauguay, t.	15,797
	Châteauguay-Centre, t.	17,942
	Delson, t.	2,941
	Dollard-des-Ormeaux, t.	25,217

Census Metropolitan Area	Components	Population
	Dorion, t.	6,209
	Greenfield Park, t.	15,348
	Hampstead, t.	7,033
	Hudson, t.	4,345
	Île-Cadieux, t.	45
	Île-Dorval, t.	7
	Île-Perrot, t.	4,021
	Kirkland, t.	2,917
	La Prairie, t.	8,309
	L'Assomption, t.	4,915
	LeMoyne, t.	8,194
	L'Épiphanie, t.	2,752
	Léry, t.	2,247
	Lorraine, t.	3,145
	Maple Grove, t.	1,708
	Marieville, t.	4,563
	Mascouche, t.	8,812
	Mercier, t.	4,011
	Montréal - Est, t.	5,076
	Montéal - Ouest, t.	6,368
	Mont-Royal, t.	21,561
	Mont-St.-Hilaire, t.	5,758
	Otterburn Park, t.	3,512
	Pincourt, t.	5,899
	Pointe-du-Moulin, t.	184
	Repentigny, t.	19,520
	Richelieu, t.	1,777
	Rosemère, t.	6,710
	Roxboro, t.	7,633
	St-Basil-Le-Grand, t.	4,402
	St-Bruno-de-Montarville, t.	15,780
	Ste-Anne-de-Bellevue, t.	4,976
	Ste-Geneviève, t.	2,847
	Ste-Thérèse-Ouest, t.	7,278
	St-Eustache, t.	9,479
	St-Hubert, t.	21,741
	St-Pierre, t.	6,801
	Terrebonne, t.	9,212
	Vaudreuil, t.	3,843
	Bois-des-Filion, vl.	4,061
	McMasterville, vl.	2,518
	Melocheville, vl.	1,601
	Pointe-Calumet, vl.	2,214
	Senneville, vl.	1,412
	Varennes, vl.	2,382
	Vaudreuil-sur-le-Lac, vl.	285
	L'Assomption, mun.	2,029
	L'Épiphanie, mun.	1,668
	Notre-Dame, mun.	2,913
	Notre-Dame-de-Bon-Secours, mun.	764
	Notre-Dame-de-l'Île-Perrot, mun.	1,552
	St-Amable, mun.	2,392
	St-Charles-de-Lachenaie, mun.	3,671
	St-Constant, mun.	5,728
	Ste-Anne-de-Varennes, mun.	2,882

Census Metropolitan Area	Components	Population
	Ste-Catherine- d'Alexandrie-de-Laprairie, mun.	3,934
	Ste-Julie, mun.	2,559
	Ste-Marie-de-Monnoir, mun.	1,362
	St-Eustache, mun.	7,411
	St-Jean-de-Dieu, mun.	3,768
	St-Louis-de-Terrebonne, mun.	4,295
	St-Marthe-sur-le-Lac, mun.	3,169
	St-Mathias, mun.	1,662
	St-Mathieu-de-Beloeil, mun.	563
	St-Paul-l'Ermite, mun.	3,660
	St-Raphael-de-l'Île-Bizard, mun.	2,950
	Terrasse-Vaudreuil, mun.	1,695
	Indian Reserves	3,982
Ottawa-Hull, Ont./Qué.	Ottawa, c.	302,341
	Hull, c.	63,580
	Vanier, c.	22,477
	Aylmer, t.	7,198
	Buckingham, t.	7,304
	Gatineau, t.	22,321
	Masson, t.	2,336
	Pointe-Gatineau, t.	15,640
	Angers, vl.	881
	Deschênes, vl.	1,806
	Richmond, vl.	2,122
	Rockcliffe Park, vl.	2,138
	Stittsville, vl.	1,994
	Templeton, vl.	3,684
	Cumberland, twp.	9,294
	Gloucester, twp.	37,145
	Goulbourn, twp.	5,341
	Hull, partie-ouest, mun.	2,966
	Lucerne, mun.	8,611
	March, twp.	5,822
	Nepean, twp.	64,606
	Templeton-Est, mun.	1,977
	Templeton-Est, partie est, mun.	253
	Templeton-Ouest, mun.	1,030
	Touraine, mun.	9,643
Québec, Qué.	Québec, c.	186,088
	Beauport, c.	14,681
	Charlesbourg, c.	33,443
	Giffard, c.	13,135
	Lauzon, c.	12,809
	Lévis, c.	16,597
	Loretteville, c.	11,644

Census Metropolitan Area	Components	Population
	Sillery, c.	13,932
		68,385
	...	8,394
	...	8,304
	...	4,505
	...	5,175
	Courville, t.	6,222
	Lac-Delage, t.	59
	Montmorency, t.	4,949
	Notre-Dame-des-Laurentides, t.	5,080
	Orsainville, t.	12,520
	St-David-de-l'Auberivière, t.	3,818
	...	1,975
	...	9,717
	...	2,050
	...	4,062
	...	2,645
	...	1,685
	...	1,487
	...	1,745
	...	2,384
	...	2,203
	...	3,998
	...	3,041
	...	1,280
	...	2,723
	...	2,974
	...	1,826
	...	4,069
	...	898
	...na, c.	139,469
	? Sherwood, mun.	1,265
	, Catharines, c.	109,722
	...	67,163
	...	21,420
	...	44,397
	...	23,113
	...	12,552
	...	9,997
	...	15,065

Census Metropolitan Area	Components	Population
St. John's, Nfld.	St. John's, c.	88,102
	Mount Pearl, t.	7,211
	Pouch Cove, t.	1,483
	Lawrence Pond, L.I.D.	—
	Petty Harbour, L.I.D.	940
	Wedgewood Park, L.I.D.	417
	St. John's Area:	
	Freshwater Bay	1,821
	Goulds	4,695
	Higgins Line	2,623
	Kanes Valley	3,535
	Logy Bay	2,724
	Mount Scio	3,582
	Unorganized (Subd. P)- Kelligrews	9,823
	Unorganized (Subd. S)- St. John's East Extern	4,858
Saint John, N.B.	Saint John, c.	89,039
	Rothesay, t.	1,038
	East Riverside-Kingshurst, vl.	852
	Fairvale, vl.	2,050
	Gondola Point, vl.	850
	Hampton, vl.	1,748
	Pamdenec, vl.	422
	Renforth, vl.	1,606
	Westfield, vl.	461
	Quispamsis, vl.	2,215
	Hampton, par.	923
	Musquash, par.	732
	Rothesay, par.	411
	Simonds, par.	1,252
	Westfield, par.	3,145
Saskatoon, Sask.	Saskatoon, c.	126,449
Sudbury, Ont.	Sudbury, c.	90,535
	Capreol, t.	3,470
	Coniston, t.	2,907
	Copper Cliff, t.	4,089
	Lively, t.	3,000
	Balfour, twp.	9,101
	Falconbridge, twp.	1,269
	Neelon and Garson, twp.	6,296
	Rayside, twp.	6,344
	Valley East, twp.	17,937
	Waters, twp.	2,936
	Unorganized	7,540
Thunder Bay, Ont.	Thunder Bay, c.	108,411
	Oliver, twp.	1,342
	Paipoonge, twp.	2,340

Census Metropolitan Area	Components	Population
Toronto, Ont.	Metropolitan Toronto:	
	Toronto, c.	712,786
	Etobicoke, b.	282,686
	Scarborough, b.	334,310
	York, b.	147,301
	York, East, b.	104,784
	York, North, b.	504,150
	Acton, t.	5,031
	Ajax, t.	12,515
	Aurora, t.	13,614
	Brampton, t.	41,211
	Georgetown, t.	17,053
	Markham, t.	36,684
	Milton, t.	7,018
	Mississauga, t.	156,070
	Newmarket, t.	18,941
	Oakville, t.	61,483
	Port Credit, t.	9,442
	Richmond Hill, t.	32,384
	Streetsville, t.	6,840
	Vaughan, t.	15,873
	Whitchurch-Stouffville, t.	11,262
	Bolton, vl.	2,984
	Pickering, vl.	2,537
	Albion, twp.	4,711
	Chinguacousy, twp.	30,997
	Esquesing, twp.	9,416
	King, twp.	12,864
	Pickering, twp.	31,734
	Toronto Gore, twp.	1,362
Vancouver, B.C.	Vancouver, c.	426,256
	University Endowment Area	3,536
	Langley, c.	4,684
	New Westminster, c.	42,835
	North Vancouver, c.	31,847
	Port Coquitlam, c.	19,560
	Port Moody, c.	10,778
	White Rock, c.	10,349
	Lion's Bay, vl.	396
	Burnaby, mun.	125,660
	Coquitlam, mun.	53,073
	Delta, mun.	45,860
	Fraser Mills, mun.	157
	Langley, mun.	21,936
	Maple Ridge, mun.	24,476
	North Vancouver, mun.	57,861
	Pitt Meadows, mun.	2,771
	Richmond, mun.	62,121
	Surrey, mun.	98,601
	West Vancouver, mun.	36,440
	Greater Vancouver, R.D.: Subdivision A	1,405
	Indian Reserves	1,750

Census Metropolitan Area	Components	Population
Victoria, B.C.	Victoria, c.	61,761
	Sidney, t.	4,868
	Central Saanich, mun.	5,136
	Esquimalt, mun.	12,922
	North Saanich, mun.	3,601
	Oak Bay, mun.	18,426
	Saanich, mun.	65,040
	Capital, R.D.: Subdivision B	22,949
	Indian Reserves	1,097
Windsor, Ont.	Windsor, c.	203,300
	Amherstburg, t.	5,169
	Belle River, t.	2,877
	Essex, t.	4,002
	Tecumseh, t.	5,165
	St. Clair Beach, vl.	1,987
	Anderdon, twp.	4,667
	Maidstone, twp.	7,734
	Malden, twp.	3,151
	Rochester, twp.	3,640
	Sandwich, South, twp.	4,842
	Sandwich, West, twp.	12,109
Winnipeg, Man.	Winnipeg, c.	246,246
	East Kildonan, c.	30,152
	St. Boniface, c.	46,714
	St. James-Assiniboia, c.	71,431
	St. Vital, c.	32,963
	Transcona, c.	22,490
	West Kildonan, c.	23,959
	Tuxedo, t.	3,258
	Charleswood, mun.	12,180
	Fort Garry, mun.	26,127
	Kildonan, North, mun.	17,713
	Old Kildonan, mun.	1,984
	St. Paul, East, mun.	2,616
	St. Paul, West, mun.	2,429

Abbreviations:

b.	borough
CA	Census Agglomeration
CMA	Census Metropolitan Area
c.	city
t.	town
vl.	village
twp.	township
par.	parish
mun.	municipality
D.M.	District Municipality
L.D.	Local District
L.I.D.	Local Improvement District
R.D.	Regional District

Sources:

Canada, Statistics Canada, *1971 Census of Canada: Population: Cities, Towns, Villages, Census Metropolitan Areas and Census Agglomerations*, Bulletin 1.1-8, Cat. No. 92-708 (Ottawa: Information Canada, 1973);

Canada, Statistics Canada, Census Division, Geography section "Final Counts of Census Agglomerations by Municipality", unpublished bulletin, (revised August, 1972).

Place of residence in 1966 (for in-migrants)	In	Out	Net	In	Out	Net	In	Out	Net	In	Out	Net
	Calgary			Chicoutimi-Jonquière			Edmonton			Halifax		
	36,110	26,025	10,085	3,615	8,505	−4,890	28,430	31,900	−3,470	10,755	15,785	−5,030
	18,800	7,975	3,025	3,055	7,305	−4,250	7,575	10,605	−3,030	—	—	—
	21,005	18,460	7,055	565	1,195	−630	20,855	21,295	−440	10,755	15,780	−5,025
	42,280	26,920	15,680	6,920	7,215	−295	52,020	34,165	17,855	21,850	20,530	1,320
	19,845	14,165	5,680	5,475	5,325	150	32,410	19,885	12,525	13,660	12,110	1,550
Different province	22,460	12,455	10,005	1,445	1,890	−445	19,160	14,280	5,330	8,190	8,420	−230
Subtotal	78,410	52,645	25,765	10,535	15,720	−5,185	80,450	66,065	14,385	32,605	36,310	−3,705
Outside Canada	24,040			1,340			21,510			6,105		
Canadian-born	4,955			800			4,750			1,940		
Foreign-born	19,085			545			16,755			4,165		
Municipality of residence in 1966 not stated‡	6,230			1,760			7,890			5,155		
Total	108,685			13,640			109,850			43,870		
	Hamilton			Kitchener			London			Montréal		
	25,870	21,205	4,665	15,210	10,880	4,330	21,565	17,060	4,505	44,925	78,875	−33,950
		16,430	3,300	11,885	8,760	3,125	15,735	13,200	3,535	17,690	13,675	4,015
		4,775	1,365	3,320	2,120	1,200	4,835	3,865	970	27,240	65,195	−37,955
		18,766	1,685	17,680	14,390	3,290	21,000	18,010	2,990	115,465	88,780	26,685
		15,215	730	14,005	12,535	1,470	18,310	15,905	2,405	99,430	65,310	34,120
		2,975	960	3,675	1,855	1,820	2,690	2,105	585	16,035	23,470	−7,435
			6,365	32,890	25,275	7,615	42,565	35,065	7,500	160,390	167,655	−7,265
	26,530			15,125			15,055			115,345		
	2,340			1,240			2,465			14,770		
				13,885			12,590			100,575		
Municipality of residence	5,930			2,850			4,015			38,690		
Total	78,215			50,865			61,640			314,425		
	Ottawa-Hull			Québec			Regina			St. Catharines-Niagara		
		30,060	11,420	15,265	17,145	−1,880	7,000	16,005	−9,005	12,330	14,700	−2,370
	16,595	15,310	1,285	13,235	13,655	−420	2,130	2,035	95	9,585	11,900	−2,315
	24,890	14,755	10,135	2,030	3,490	−1,460	4,865	13,975	−9,110	2,745	2,805	−60
		17,580	16,500	36,885	16,510	20,375	18,465	11,590	6,875	10,915	10,145	770
		18,760	9,270	34,140	14,865	19,275	15,825	6,100	9,725	8,035	8,200	−165
		8,820	7,235	2,745	1,645	1,100	2,635	5,490	−2,855	2,875	1,945	930
		57,635	27,925	52,150	33,650	18,500	25,465	27,595	−2,130	23,245	24,840	−1,595
				5,930			3,080			10,825		
				3,070			570			1,500		
				2,855			2,510			9,325		
				8,735			1,885			2,880		
Total	124,235			66,815			30,425			36,945		
	St. John's			Saint John			Saskatoon			Sudbury		
	6,730	6,595	4,865	3,220	3,775	−555	6,650	15,010	−8,360	7,810	8,775	−965
				—	—	—	2,035	2,130	−95	5,405	7,085	−1,680
Different province	2,735	6,595	−3,860	3,220	3,775	−555	4,615	12,875	−8,260	2,400	1,685	715
		6,390	5,315	6,630	6,670	−40	20,590	13,060	7,530	15,015	10,375	4,640
Same province	10,370	4,575	5,795	4,605	4,530	75	17,490	7,025	10,465	10,530	8,875	1,655
Different province	1,335	1,815	−480	2,025	2,140	−115	3,095	6,035	−2,940	4,485	1,500	2,985
Subtotal	14,435	12,980	1,455	9,850	10,445	−595	27,240	28,065	−825	22,825	19,145	3,680
Outside Canada	1,965			1,400			3,370			4,410		
Canadian-born	665			555			615			710		
Foreign-born	1,295			840			2,755			3,700		
Municipality of residence in 1966 not stated‡	1,615			1,465			1,495			2,635		
Total	18,020			12,710			32,100			29,875		

Table A1.2 (*Concluded*)

Place of residence in 1966 (for in-migrants) or 1971 (for out-migrants)	In	Out	Net	In	Out	Net	In	Out	Net	In	Out	Net
	Thunder Bay			Toronto			Vancouver			Victoria		
Other CMA	**4,065**	**5,650**	**−1,585**	**95,330**	**84,770**	**10,560**	**69,220**	**28,625**	**40,595**	**19,760**	**11,280**	**8,480**
Same province	2,280	2,635	−355	42,360	47,355	−4,995	6,005	5,310	695	5,310	6,010	−700
Different province	1,785	3,015	−1,230	52,975	37,415	15,560	63,215	23,320	39,895	14,455	5,275	9,180
Nonmetropolitan areas	**6,555**	**4,815**	**1,740**	**90,200**	**120,885**	**−30,685**	**62,335**	**56,475**	**5,860**	**15,890**	**11,700**	**4,190**
Same province	5,460	3,150	2,310	60,065	100,190	−40,125	39,935	47,730	−7,795	9,090	9,635	−545
Different province	1,100	1,665	−565	30,140	20,695	9,445	22,400	8,745	13,655	6,800	2,065	4,735
Subtotal†	**10,620**	**10,470**	**150**	**185,530**	**205,655**	**−20,125**	**131,555**	**85,105**	**46,450**	**35,650**	**22,985**	**12,665**
Outside Canada	**2,955**			**262,195**			**71,670**			**8,570**		
Canadian-born	445			19,870			10,410			2,610		
Foreign-born	2,510			242,325			61,260			5,965		
Municipality of residence in 1966 not stated‡	**1,150**			**28,700**			**20,705**			**3,920**		
Total	**14,725**			**476,430**			**223,925**			**48,145**		

	In	Out	Net	In	Out	Net
	Windsor			Winnipeg		
Other CMA	**9,895**	**10,390**	**−495**	**19,830**	**38,070**	**−18,240**
Same province	7,355	8,595	−1,240	—	—	—
Different province	2,540	1,800	740	19,830	38,070	−18,240
Nonmetropolitan areas	**8,705**	**9,140**	**−435**	**38,760**	**29,380**	**9,380**
Same province	7,015	8,155	−1,140	26,045	16,130	9,915
Different province	1,685	985	700	12,715	13,250	−535
Subtotal†	**18,600**	**19,535**	**−935**	**58,590**	**67,455**	**−8,865**
Outside Canada	**13,250**			**23,780**		
Canadian-born	1,860			4,320		
Foreign-born	11,390			19,460		
Municipality of residence in 1966 not stated‡	**2,195**			**6,920**		
Total	**34,040**			**89,295**		

Notes

[1] In comparison, 68 percent of the 1970 population of the U.S.A. lived in Standard Metropolitan Statistical Areas (SMSAs) of over 100,000 population. The SMSA concept is roughly comparable to the Canadian CMA concept. The figure for the U.S.A. was taken from United States. Bureau of the Census, *Statistical Abstract of the United States: 1974*, 95th ed. (Washington: U.S. Government Printing Office, 1974), p. 20.

[2] In 1971, a CMA comprised: 1) municipalities ___tely or partly inside the continuous built-up area, ___ mu__ipalities lying within a 20-mile radius of the ___ ___ ___ ___ area if (a) the percen- ___ of the labour force in primary activities was smaller ___ the national average and (b) the percentage of ___lation increase for 1956-1966 was larger than the ___ ___ ___ When only (a) or (b) was ___ ___mu__ ___ ___ ___ if they were accessed ___ ___ ___ ___.

[3] ___ ___, Statistics Canada. *Estimated Popula- ___ ___ Metropolitan Areas of Canada,* ___ ___ ___ ___ ___

[4] ___ ___ ___ ___ ___ ___ ___ ___ metropolitan growth ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ (___: Dominion Bureau of Statistics, 1967), pp. ___ ___.

[5] Respondents were to use 1971 municipal boundaries in stating the 1966 municipality of residence, but many would have been unaware of boundary changes.

[6] Canada, Department of Manpower and Immigration, *Immigration and Population Statistics*, Volume 3 of the "Green Paper" on Immigration (Ottawa: Information Canada, 1974) p. 87.

[7] A very rough approximation of the amount by which the immigration ratio in Table 1.6 should be reduced to adjust for emigration would be 1.5, although the appropriate amount undoubtedly varies among cities. Emigration is probably higher from cities which attract many immigrants, since some decide not to remain in Canada.

2 Why neighbourhoods differ

2.1   Introduction

Yorkville, Notre Dame de Grâce, Gastown, Sandy Hill, Africville. To residents of Toronto, Montréal, Vancouver, Ottawa and Halifax these names evoke vivid impressions of neighbourhoods differentiated in terms of the social, cultural, economic and ethnic characteristics of their residents; their land use; the size, age, type or cost of their dwellings; or their history and recent change. To someone searching for a new place to call home, the neighbourhood differences implied by a name and reputation are often so clear-cut that large portions of the city are completely ignored in the search. The land developer, speculator or entrepreneur also differentiates neighbourhoods – but for their profit-making potential. The public decision-maker, on the other hand, views neighbourhoods as the generators or the locales of problems in need of solutions.

While everyone recognizes the existence of great differences among neighbourhoods according to many criteria, the explanation of these differences quickly becomes exceedingly complex. The answers ultimately lie in the organization of society, cultural traditions, the economic system and the political system. Historical and environmental factors also play an important role in neighbourhood differentiation.

Many agents are involved in the creation of neighbourhoods. Traditionally, urbanologists have viewed neighbourhoods as the outcome of the choices made by consumers. Neighbourhoods are the way they are because people of certain characteristics have chosen a particular location for their home or business.

In contrast to this demand-oriented view of neighbourhood formation is the supply-oriented approach. Neighbourhoods can be seen as the outcome of investment decisions made by those involved in the property industry. If a developer decides to build row houses rather than spacious single-detached dwellings on half-acre lots, the occupants of the houses he constructs will be different. The real estate agent who influences the residential search process of his clientele, and the mortgage company which evaluates each neighbourhood in terms of the risk to its investment, likewise have a role in drawing the maps of the city.

Homeowners, tenants, entrepreneurs, investors and real estate firms all must operate within the legal and institutional framework established by governments at all levels. But governments do more than regulate the activities of individuals and corporations. They also have an active role in the creation of neighbourhoods. A new sewer here, an urban renewal program there, a park, a highway or an airport somewhere else – all are products of decisions made by the public sector. Private decisions are made within the context of public decisions of the location of urban infrastructure.

A further complexity in the task of accounting for differences among neighbourhoods arises from the fact that many of our neighbourhoods are products of decisions made over many decades, if not centuries. Because of the long life of most physical structures, inertia is extremely important in accounting for the present characteristics of urban neighbourhoods.

Urban neighbourhoods in Canada are the result of the complex interplay of the household seeking a place to live, the property industry and other entrepreneurs seeking to maximize profits, and governments seeking to retain power. This chapter will explore at greater length the role and behaviour of each of these groups in the creation of differences among neighbourhoods.

Other factors, too, account for neighbourhood differentiation. The physical setting of the urban area is usually far from uniform. Mountains, river valleys, lakeshores and swamps are evaluated differently by those seeking places of residence and business. In the organization of this chapter, the site characteristics of the urban area are simply taken as the context within which other decisions are made.

In spite of the great differences among Canadian cities which were documented in Volume I in this series, the same types of neighbourhoods are to be found in most metropolitan areas. Admittedly, each neighbourhood is unique when its characteristics are examined in minute detail, but there are enough similarities among particular neighbourhoods in different cities to justify a nationwide typology of neighbourhoods in Canada's metropolitan areas. Neighbourhoods throughout Metropolitan Canada are the outcome of processes that are fundamentally alike, in all areas, notwithstanding the importance of differences among metropolitan areas.

2.2   Residential selection and the divisions of Canadian society

Canadian society, like all societies which have undergone the social and economic changes accompanying urbanization and industrialization, is differentiated in many ways. The most fundamental distinctions are based upon socio-economic status, the family life cycle and cultural characteristics such as ethnic origin, language and religion. The importance which Canadians attach to these three elements of individual differences is well illustrated by the fact that in censuses of population taken by Statistics Canada (and its counterparts in most other nations) virtually all the data collected are measures of one or more of these basic dimensions.

Class structure in Canada and other modern societies is based on the occupational division of labour. Because of the varying amounts of skill necessary for different occupations and the different monetary rewards which society bestows on those practising different occupations, measures of income, education and occupation are highly, though imperfectly, correlated. Similarly, class, status (i.e., prestige or esteem) and power bear a close relationship to each other, without being identical dimensions of social inequality.

Canadians are also differentiated according to their stage in the family life cycle. The life cycle of an individual relates to his family relationships as measured by such information as marital status, age and the ages of one's dependents. Various stages in the life cycle may be defined, such as childhood, adolescence, single living away from the parental home, early married life, child-bearing, child-rearing, child-launching, old age and widowhood. Other modes of family and living arrangements also exist, but the typical individual passes through these stages in this order.

The third distinction within Canadian society, that according to membership in ethnic or other cultural groups, is measured by data relating to ethnic origin, birthplace, language, religion and in some instances, place of previous residence.

Once we know that a person is a 44 year-old, married, Roman Catholic truck driver with three children, seven years of education, earning $7,000 a year, born in Hungary, who first entered Canada in 1957, his niche in Canadian society is quite well defined. He would have provided all this information on his 1971 census questionnaire. Although he would also have been asked his dwelling type, rent (or house value if he owned his home), whether he owned a home freezer, his place of work, and a host of other questions, the basic socio-economic, demographic and cultural data provide the information by which all but his personal acquaintances and relatives assess his station in life.

Even though Canadians differ according to age, religion, occupation, etc., it does not follow that neighbourhoods in Metropolitan Canada would necessarily be differentiated along these same lines. A retired, poor, Italian construction worker and a well-to-do, middle-aged, Saskatchewan-born, Baptist lawyer could, in principle, live side-by-side in Toronto. But in fact, such distinct persons rarely do. The very demographic, socio-economic and cultural divisions in Canadian society are precisely the ways in which Canadian neighbourhoods differ. Why is this the case?

One of the reasons frequently advanced to explain why neighbourhoods are differentiated by socio-economic status is that people of similar status prefer to live together. Certainly, towards the upper end of the class scale, there are obvious perceived advantages to residing in a neighbourhood of higher-status people. Not only does a fashionable address act as a status symbol, but the potential for interaction with the "right" kind of people is enhanced. For working-class people, too, the homogeneous working-class neighbourhood provides more opportunity for interaction with people of their own class.

The main reason for the existence of working-class neighbourhoods, however, may well be that the residential choice of working-class people is so restricted by their limited financial means that they can live only in neighbourhoods seldom chosen by the more affluent members of society. Working-class neighbourhoods, therefore, are created by default, rather than by

the free choice of their residents. Viewed in this manner, socio-economic differences among neighbourhoods are simply the result of the fact that people usually choose to live in as high status a neighbourhood as they can afford.

People in different stages of the life cycle have different demands for housing. Within the economic constraints imposed by their income level, households seek accommodation to meet their demands. These demands are met in different parts of the city. Hence, neighbourhoods are differentiated according to the life-cycle profile of their population. High-rise accommodation is less suitable for large families than for single people, childless couples and the aged. The age-structure and family-size characteristics of high-rise neighbourhoods, therefore, are heavily biased towards the latter groups.

Ethnic and cultural differences further complicate the pattern of neighbourhood characteristics. Minority ethnic groups are clustered into specific neighbourhoods for many reasons. Kinship and friendship ties and ethnic institutions are frequently cited as important considerations. Naturally, people wish to settle where they can communicate in a language they understand. If an ethnic or immigrant minority is also differentiated from the host society by economic status, life style or life cycle, the location of the group within the city is further restricted.

Thus, the economic, demographic and ethnic characteristics of a household determine its housing needs and its ability to satisfy them. Households and housing units are matched up through the mechanism of the housing market. Up to this point we have concentrated on the demand side of this market. We now turn to the supply side, and consider neighbourhoods as products of the investment decisions of the property industry.

2.3   The role of the property industry

Land developers, builders and a host of related industries create not just buildings, but neighbourhoods. Although only a very small proportion of a city's housing stock is added in any given year, over a span of 10 or 20 years hundreds of neighbourhoods are added to Canada's metropolitan areas. A single developer now creates not only neighbourhoods but whole sectors of the city. By building dwellings of a given type and price, he determines, within quite narrow limits, the characteristics of the occupants of newly developed areas. Rows of $50,000 three-bedroom townhouses, $100,000 single-detached homes, and $35,000 condominium apartments may all be built by the same developer, but the neighbourhoods produced will be quite different depending upon whether the developer mixes dwelling types or confines each type to a separate neighbour-

hood. The potential for residential mixing of people by economic status and stage in the life cycle is very much determined by the decisions of the property industry.

The property industry includes many individuals and corporations in addition to the developers and builders. Lawyers, architects, mortgage brokers, financial institutions, real estate firms and land speculators all have a role in determining who gets to live where and what types and amounts of housing are produced. All of these groups are also involved in what happens to neighbourhoods after they are occupied. The architect with an imaginative renovation scheme, the insurance company which refuses to invest in particular types of neighbourhoods, the ethnic real estate agent and the skilled developers' lawyer all play a part in the property industry "game". Their strategies, along with those of households seeking places to live, ultimately determine the character of neighbourhoods. Many would argue, of course, that the property industry simply responds to demands created by the general public as consumers. The forces of demand and supply, however, are not independent. The property industry, therefore, both responds to demands and shapes preferences for housing of particular types and prices in particular neighbourhoods.

2.4   The role of governments

Federal, provincial and municipal governments all have very important roles in determining the characteristics of urban neighbourhoods. Some of their operations have obvious spatial implications—the zoning by-law, the trunk sewer, the neighbourhood improvement program. But many other government actions have less obvious and frequently unintentional effects on neighbourhood formation and change. At the federal level, policies on immigration, transportation, housing, income redistribution and taxation, to name but a few, influence whether John Doe obtains a mortgage on a house in a particular neighbourhood, is expropriated for an airport or is likely to acquire Portuguese neighbours. Provincial policies on housing, regional planning, industrial incentives, transportation, municipal grants and regional government are among the concerns of provincial governments which directly or indirectly influence neighbourhood evolution. Municipal policies on transportation, housing, zoning, open space and citizen participation may be added to the list.

When one considers that many of the policies influencing neighbourhoods are formulated and implemented at two or more levels of government, and that the policy of one government influences the policy of others, the complexity of government involvement in urban neighbourhoods becomes even more apparent. Furthermore, each level of government serves not only the population as households seeking a place to live, but also the property industry seeking to make a profit.

2.5   The historical legacy

Even though Metropolitan Canada has experienced very rapid rates of population growth in the past, many of our urban neighbourhoods are old, at least by Canadian standards. As noted earlier, 15 percent of Metropolitan Canada's occupied dwellings in 1971 were built before 1921; 32 percent before 1946; although the proportion varies widely from one city to another.

Physical structures have long lives, and although some are convertible into other than their original use, they remain in place for decades. The importance of long-past actions of governments, the property industry and individuals in explaining the present pattern of neighbourhood differences must be recognized. But roughly one-third of Metropolitan Canada's dwellings in 1971 had been built since 1961. In only a few years the potential for change in such rapidly growing metropolitan areas as Canada's is great indeed.

2.6   Summary

There are many reasons why your neighbourhood is like it is. Its residents chose to live there because their dwelling provided the space or amenities desired within the constraints of their budgets. Except for households with no one employed, the location provides each household with what was considered to be reasonable access to work. The amenities of the neighbourhood as distinct from the dwelling may also have attracted many residents. Others may have chosen it for its nearness to shops, schools, churches, friends or relatives.

Except in the relatively uncommon instance where an individual builds his own home or place of business, the property industry decided that dwellings of a particular type and other nonresidential types of buildings should be located in your neighbourhood. These decisions were usually made for the profit motive.

Governments, too, decided whether development of a particular type should be permitted. Citizens' groups may have persuaded your municipal government not to allow an apartment complex on your block. Your neighbourhood may have been built in response to demand created by a new provincial university in your city.

The possible reasons for your neighbourhood characteristics are legion. This review volume and Volume III do not explain why each neighbourhood in Metropolitan Canada is like it is. Rather, they present some of the ways in which Canadian neighbourhoods differ. They will enable comparison between any neighbourhood in Metropolitan Canada and all others in the same or other metropolitan areas. This volume points out similarities and differences among Canada's metropolitan areas with respect to spatial patterns of neighbourhood characteristics, and also provides justification for and explanation of the measures used in Volume III. The interrelationships among neighbourhood characteristics are explored, within the context of the relationships among the divisions of Canadian society.

3 The family life cycle

3.1   Introduction

In Chapter 2, the point was made that metro-politan populations are sorted out into neighbourhoods which are differentiated according to stage in the family life cycle. It is this dimension of neighbourhood varia-tion that is the concern of this chapter. It is found that families of different ages occupy dwellings of different characteristics, and that neighbourhoods do indeed vary according to the age of their population. We learn what age groups tend to live in the same neighbour-hoods, and, on the basis of this discovery, a family life-cycle index is developed to describe with a single measure the life cycle of the population of a neighbour-hood or census tract. This index forms the basis of a discussion of where families at different stages in the life cycle tend to live in metropolitan areas.

Metropolitan areas are themselves differen-tiated according to the age structure of their population and related characteristics, such as family size, marital status and birth and death rates. We look first, there-fore, at metropolitan areas as entities, to provide basic information as a background to the life-cycle charac-teristics of urban neighbourhoods.

3.2   Metropolitan differences in age structure and family size

Metropolitan areas acquire differences in their age distributions because of the age-sex selectivity and relative volumes of the in-migrant and out-migrant streams, and because of city differences in fertility rates. Cities with high rates of net in-migration tend to have a predominance of young adults and, hence, also young children, in their age profile.

Table 3.1 presents the age distribution of the population of each CMA in 1961 and 1971 on the basis of 1971 CMA boundaries. From the last three rows of the table it is evident that in both years Metropolitan Canada had a relatively lower proportion of children and senior citizens than the remainder of the country. During the decade, however, metropolitan-nonmetropolitan differences in age structure declined, except insofar as those aged 65 and over were con-cerned.

All metropolitan areas shared in the nationwide decline in birth rates during the sixties, as evidenced by the declining percentage of children under 5 in each CMA. In 1961, at least 10 percent of the population of each CMA was under 5, but by 1971, only St. John's reached this level. The largest increases were in the 15-24 age category as the postwar babies entered this age group.

Individual metropolitan areas deviate substan-tially from the age profile for Metropolitan Canada. The aged profile of Victoria and Vancouver which attracts so many retired people, and the youthful profiles of Sudbury, St. John's, Chicoutimi-Jonquière, Calgary and Edmonton are the most abnormal age structures.

Average family size is closely related to the age structure of the population, and was therefore included in Table 3.1. For census purposes, a family consists of a husband and wife (with or without children who have never married, regardless of age) or a parent with one or more children never married, living in the same dwel-ling. The decline in average size of the Canadian family from 3.9 persons in 1961 to 3.7 in 1971 was achieved primarily through the declining size of the nonmet-ropolitan family.[1] The decline was especially striking in Chicoutimi-Jonquière which continued to have the largest families and the highest proportions in the 5-14 and 15-24 age groups. Average family size declined in a number of cities, but because many of the children of the postwar baby boom were still living with their par-ents in 1971, the anticipated declines in average family size had not yet struck all metropolitan areas.

3.3 Age structure and housing characteristics

Housing needs are very closely related to household characteristics. The young singles, the young childless couple, the family with preschool children, the mature family, the older childless couple and the widowed living alone all have different housing needs, and different financial means for meeting their needs. Therefore, the type, size, tenure and quality of housing demanded by households at different stages in the family life cycle are likely to be found in different neighbourhoods. This contributes to differences in the age distribution of the population.

Table 3.2 shows that in Metropolitan Canada in 1971 the type, tenure and size of dwellings varied markedly according to the sex and to the age of the household head.[2] Households with female heads were much less likely to live in single-detached dwellings and in owner-occupied dwellings than households with male heads. Dwellings occupied by households with female heads also had, on the average, one room less than dwellings with male-headed households. Only 15 percent of household heads under 25 years of age lived in single-detached dwellings, while the majority of household heads between 35 and 64 years of age lived in single homes. The rate of owner-occupancy and the proportion of single-detached dwellings both peaked at the 45-54-year age group. Middle-aged persons (35-54) also occupied the largest dwellings.

The basic relationships between age and sex of the household head and the type, tenure and size of dwellings which apply to Metropolitan Canada as a whole hold true for each metropolitan area, with very few exceptions (Table A3.1). In Montréal and Québec,

Table 3.1 Age and family size, Census Metropolitan Areas, 1961 and 1971*

| Census Metropolitan Area | Age group (%) | | | | | | | | | | | | | | Average family size (%)† | |
| | 0-4 | | 5-14 | | 15-24 | | 25-34 | | 35-44 | | 45-64 | | 65+ | | | |
	1971	1961	1971	1961	1971	1961	1971	1961	1971	1961	1971	1961	1971	1961	1971	1961
Calgary	9.3	13.9	21.2	19.8	19.2	13.3	15.1	17.1	12.9	14.0	16.0	14.9	6.3	6.9	3.6	3.6
Chicoutimi-Jonquière	7.7	15.2	24.7	26.7	22.1	17.9	13.9	14.1	11.8	11.7	15.4	11.5	4.2	2.9	4.4	5.1
Edmonton	9.3	14.1	21.4	20.8	20.0	14.3	14.8	16.4	12.3	13.6	16.2	14.9	6.0	5.8	3.6	3.7
Halifax	8.9	13.0	20.5	20.3	20.7	17.3	14.7	14.9	11.3	13.2	17.5	15.5	6.4	5.7	3.7	3.8
Hamilton	8.1	11.9	20.3	19.9	17.7	12.4	13.3	14.6	12.7	14.8	19.8	18.4	8.2	7.9	3.5	3.6
Kitchener	9.1	11.9	19.8	20.1	19.4	13.5	14.7	14.6	11.9	14.1	17.7	18.2	7.4	7.7	3.5	3.6
London	8.2	11.3	19.5	19.1	18.7	13.5	14.0	13.8	11.7	14.2	19.3	18.8	8.7	9.3	3.5	3.5
Montréal	7.7	11.8	19.7	19.4	18.2	14.5	15.2	15.8	13.0	14.2	19.1	18.1	7.0	6.1	3.6	3.7
Ottawa-Hull	8.2	12.6	21.1	21.3	19.5	14.6	14.5	14.3	12.1	14.1	18.2	16.7	6.4	6.4	3.7	3.8
Québec	7.9	11.7	20.0	20.5	19.6	16.8	15.8	14.7	12.1	13.4	18.1	17.1	6.5	5.8	3.9	4.2
Regina	9.1	12.7	20.4	18.8	19.8	16.3	13.3	15.4	11.3	13.2	18.0	16.2	8.2	7.4	3.6	3.6
St. Catharines-Niagara	8.1	11.5	20.6	21.3	17.9	13.0	12.2	13.4	12.1	14.6	20.5	18.5	8.7	7.6	3.6	3.6
St. John's	10.0	13.5	22.6	23.5	20.9	17.4	13.4	12.4	9.9	11.7	16.6	15.5	6.6	6.2	4.1	4.3
Saint John	8.8	11.9	20.8	21.0	18.9	14.2	11.9	12.2	10.3	13.2	19.8	18.6	9.4	8.9	3.8	3.8
Saskatoon	9.0	13.0	20.2	18.9	20.4	15.7	13.6	15.2	10.9	12.4	16.9	15.7	9.0	9.1	3.6	3.6
Sudbury	9.6	15.1	23.5	23.2	20.8	15.0	14.2	15.4	11.7	13.8	16.2	14.2	4.0	3.3	3.9	4.0
Thunder Bay	8.1	11.5	20.1	21.2	18.7	13.1	11.9	13.2	11.5	14.5	20.7	18.9	9.0	7.6	3.6	3.6
Toronto	8.1	11.3	18.8	18.0	17.6	12.4	15.3	16.3	13.5	15.2	19.1	19.1	7.5	7.8	3.4	3.4
Vancouver	7.3	10.5	18.1	18.4	17.6	12.2	14.0	13.4	12.1	14.5	20.9	19.9	10.0	11.1	3.4	3.4
Victoria	6.4	10.0	17.6	17.9	17.4	12.6	10.8	11.3	10.2	13.2	22.4	19.2	15.1	15.8	3.3	3.4
Windsor	8.6	12.1	20.6	21.3	18.5	12.7	12.8	12.8	11.4	13.5	18.7	19.3	9.4	8.3	3.6	3.7
Winnipeg	8.0	11.1	18.5	19.0	19.2	14.0	13.3	14.0	11.2	14.0	20.3	18.7	9.5	9.0	3.5	3.5
Metropolitan Canada	8.1	11.8	19.7	19.5	18.5	13.8	14.5	15.1	12.5	14.2	19.0	18.0	7.7	7.5	3.6	3.6
Nonmetropolitan Canada	8.8	12.9	22.9	23.7	18.6	14.9	12.0	12.1	10.8	11.9	18.3	16.7	8.6	7.8	3.9	4.1
Canada	8.4	12.4	21.2	21.6	18.6	14.3	13.4	13.6	11.7	13.1	18.7	17.4	8.1	7.6	3.7	3.9

CMAs which had by far the lowest percentage of single-detached dwellings, however, the proportion of households living in such dwellings peaked at the 35-44-year age group. Similarly, in Regina, Sudbury, Vancouver and Victoria where single-detached dwellings are the norm, the 35-44-year age group also had the highest rate of occupancy of single-detached dwellings. The single exception to the rule that rates of owner-occupancy peak in the 45-54-year age group was in St. John's, Newfoundland, where household heads between 55 and 69 years of age had the highest owner-occupancy rate.

Furthermore, there are very great differences among metropolitan areas in the tenure and type of dwellings. The proportion of single-detached dwellings ranged from only 23.7 percent in Montréal to 76.1 percent in Thunder Bay. It is nevertheless true that the variation in tenure and type of dwelling according to the age of the household head is even greater than the variation among metropolitan areas.

Table A3.1 also contains information on median house values and on rents, by age and sex of the household head. House values peaked among household heads aged 35-44 except in Chicoutimi-Jonquière where those aged 25-34 occupied the most expensive houses, and in Victoria where those aged 45-54 had the most costly homes in 1971. Rents usually were highest among household heads in either the 25-34 or 35-44 age brackets. In Saint John, however, where rents were generally low, rents paid by those under 25 were the highest; and in Ottawa-Hull and Toronto, where rents were the highest of all the CMAs, those aged 45-54 paid the highest rents.

House values and rents also vary markedly among metropolitan areas, as well as by age and sex of the household head. Median house values in Toronto in 1971 were more than twice as high as in Chicoutimi-Jonquière or Saint John. The relationships among house prices, rents, owner-occupancy rates, dwelling types and age of the household head are necessarily complex. Undoubtedly, the proportion of household heads in

each age category who own their homes and live in single-detached dwellings depends upon the relative cost of owning and renting, and upon the types of housing which the city has in stock. Rents and house prices are in turn partly determined by population growth rates, population size and incomes.

The spatial pattern of a city's population by age groups is closely related to the distribution of dwellings by tenure, type, size and cost, since all these dwelling characteristics vary significantly according to the age of the household head. It is evident, therefore, that a large number of housing and demographic variables are interrelated. But the relationships among these variables themselves vary in detail from city to city, while maintaining their basic similarity. It is partly because of this variation that metropolitan areas vary in the spatial distribution of age groups.

Table 3.2 Housing characteristics by age and sex of household head, Metropolitan Canada, 1971*

Age or sex of household head†	Single detached dwellings‡ (%)	Rented dwellings§ (%)	Rooms per dwelling¶
Male	52.3	43.3	5.5
Female	29.2	68.3	4.4
Under 25	15.0	91.7	3.9
25-34	36.9	64.0	4.9
35-44	57.2	38.0	5.9
45-54	59.6	34.0	5.9
55-64	53.9	37.8	5.5
65-69	48.8	41.5	5.1
70 plus	45.9	45.5	4.9
Total	**48.0**	**47.9**	**5.3**

Data in this table refer only to private households in private dwellings. Collective households in collective dwellings are excluded (e.g., hotels, large lodging houses, institutions, camps)

† A household consists of a person or groups of persons occupying one dwelling. The household head is the husband if both husband and wife are present, the parent (regardless of age or dependency) if living with unmarried children, or any member of a group sharing a dwelling equally.

‡ A dwelling refers to a structurally separate set of living quarters with a private entrance or from a common hallway or stairway inside the building, i.e., the entrance must not be through someone else's living quarters. A single detached dwelling is a structure with one dwelling only, separated by open space from all other structures except its own garage or shed. This column gives single detached dwellings as a percent of occupied private dwellings, for each age or sex category.

§ A rented dwelling refers to an occupied dwelling which is not owned by any member of the household. Included are living quarters provided rent free if the quarters are not owned by any member of the household. This column gives rented dwellings as a percent of occupied private dwellings, for each age or sex category.

¶ A room is an enclosed area within a dwelling which is finished and suitable for year-round living. Partially divided L-shaped rooms are considered to be separate rooms if they are considered to be such by the respondent (e.g., L-shaped dining room-living room arrangements). Not counted as rooms are bathrooms, closets, pantries, halls and rooms used solely for business purposes.

Source:
Canada, Statistics Canada, *1971 Census of Canada: Housing: Dwelling Characteristics by Age and Sex of Household Head*, Bulletin 2.4-6, Cat. No. 93-739 (Ottawa: Information Canada, 1975).

3.4   Segregation of age groups

We turn now to the question of which age groups in which metropolitan areas are the most highly segregated. Consider first the relationship between urban size and the degree of age-group segregation. When a city of two million is divided into census tracts of about 5,000 population each, the likelihood of a census tract having a specialized age structure would appear to be greater than when a city of 100,000 is divided into census tracts of 5,000 population each. A large city is more likely to have an entire homogeneous census tract built up and occupied within the space of a few years, acquiring the specialized age structure of a new subdivision. A large city is also more likely to have very large institutions for mentally retarded children, the chronically ill, etc. Occasionally such large institutions comprise an entire census tract. There may also be a greater need for persons in particular age groups to segregate themselves into particular areas in a larger city than in a smaller one, in order to maintain easy access to the types of institutions and facilities required by each age group. Larger cities are therefore expected to be the most segregated.

In order to measure segregation, a segregation index was calculated for each of 11 age groups in each of the 21 tracted CMAs in 1971. [3] The index represents the proportion of an age group's population which would have to relocate to another census tract in order for that group's spatial distribution to be the same as the distribution of the rest of the population in that metropolitan area. The index can have a minimum of zero (indicating no segregation) and a maximum of one (indicating complex segregation). Details on the manner of

Figure 3.1 Age-group segregation and population, Census Metropolitan Areas, 1971
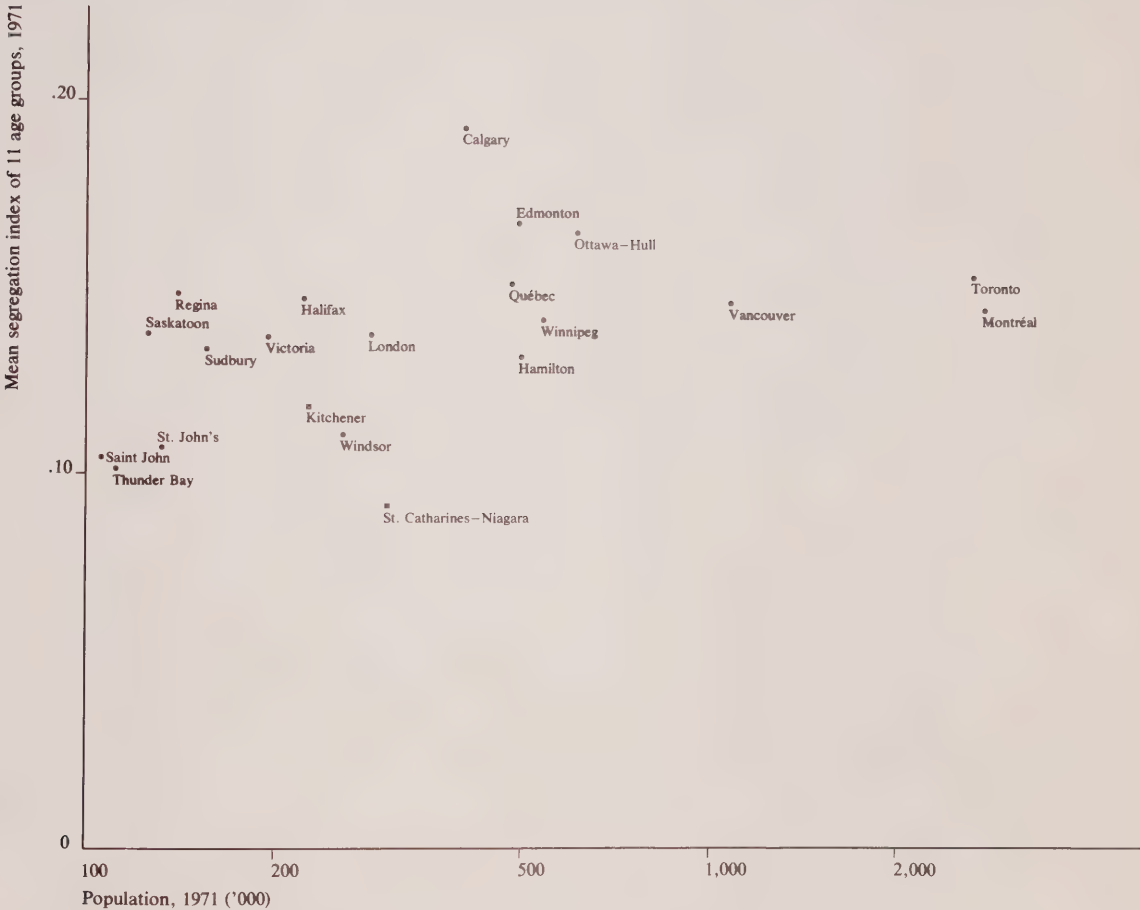
calculation are found in the technical appendix to this chapter.

Segregation indices for each age group in each CMA are shown in Table 3.3, together with the average indices for each CMA and each age group. In every city, the population aged 70 and over was the most highly segregated, followed in turn by those aged 65-69, and then, in most instances, by those aged 55-64. The two groups over 65 were usually twice as segregated as most groups under 55. Among the groups under 55, the 20-24 age group was the most segregated. The most segregated groups are those with specialized housing demands. Persons in the 20-24 age group, if they have left their parental home, normally live in rented accommodation, often in apartments whose distribution tends to be very uneven across the city. The retired also often have specialized housing needs, and move into rented apartments or institutions with uneven distributions. A combination of voluntary and forced segregation, imposed by the limited financial means of the old and of the young adults, is involved.

The average of the 11 segregation indices was highest in Calgary (.193) and lowest in St. Catharines-Niagara (.082). The variance in segregation indices was greater among age groups than among metropolitan areas, but metropolitan differences were still great enough to warrant explanation. The relationship between population size and age-group segregation is examined first. In Figure 3.1 the mean segregation index of the 11 age groups is plotted against the population of each CMA.[4]

The association between city size and age-group segregation is weak, although larger cities do tend to be more highly segregated. There is a stronger rela-

Figure 3.2 Age-group segregation and mobility, Census Metropolitan Areas, 1971

26
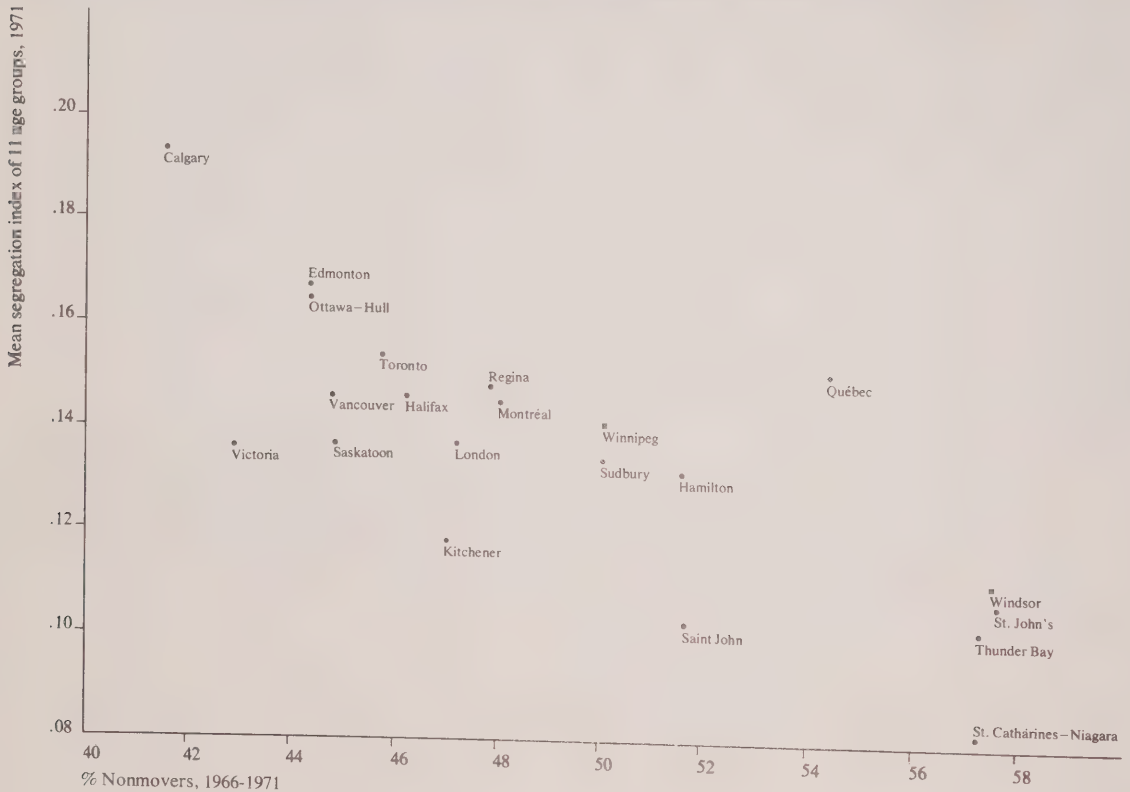
tionship, however, between age-group segregation in 1971 and the rate of population growth between 1961 and 1971. Faster-growing cities have a higher degree of age-group segregation than slow-growth cities. There is also an even stronger relationship between age-group segregation and the proportion of the population aged 5 and over in 1971 which lived in the same dwelling in 1966 and 1971. Metropolitan areas with high levels of mobility tend to have high levels of age-group segregation, as shown in Figure 3.2.[5]

3.5   A family life-cycle index

The family life cycle, though a simple concept, is rather difficult to measure with a single index. In order to categorize an individual according to his stage in the life cycle, information on age, sex, marital status, numbers and ages of children, and family relationships are all needed. Measurement of the family life cycle becomes even more difficult when applied to a neighbourhood's population. Every neighbourhood is likely to have persons at all stages in the life cycle: widows with teenage children, two-parent families with preschool children, young singles, etc. But neighbourhoods are known to specialize in housing persons in particular stages in the life cycle, and a measure of the family life cycle of a neighbourhood (i.e., a census tract) is developed in this section. This measure is included in Volume III in this handbook series to provide, with a single index, some idea of the life-cycle profile of the population of each census tract.

In order to devise a family life-cycle index for a census tract, we begin by asking which age groups are usually found together in the same neighbourhood. To answer this question, the proportion of the population in each of 11 age groups in each of the census tracts in Metropolitan Canada was calculated, and an 11 x 11 correlation matrix compiled on the basis of these proportions. The positive values in the matrix, shown in Table 3.4, indicate that a census tract with a high proportion of the population in the column-designated age group is likely to have a high proportion in the row-designated age group, and vice versa. A negative value indicates that a census tract with a high proportion in the column-designated age group is likely to have a low proportion in the row-designated age group, and vice versa. Thus the *sign* of the correlation coefficient indicates the direction of the relationship, while the absolute *size* of the coefficient indicates the strength of the relationship. A value of zero would indicate no relationship between the proportion of the population in the relevant age groups, and a value of ± 1 would indicate a perfect linear relationship.

Figure 3.3 Frequency distribution of census tracts by family life cycle, Metropolitan Canada, 1971

Family life-cycle index
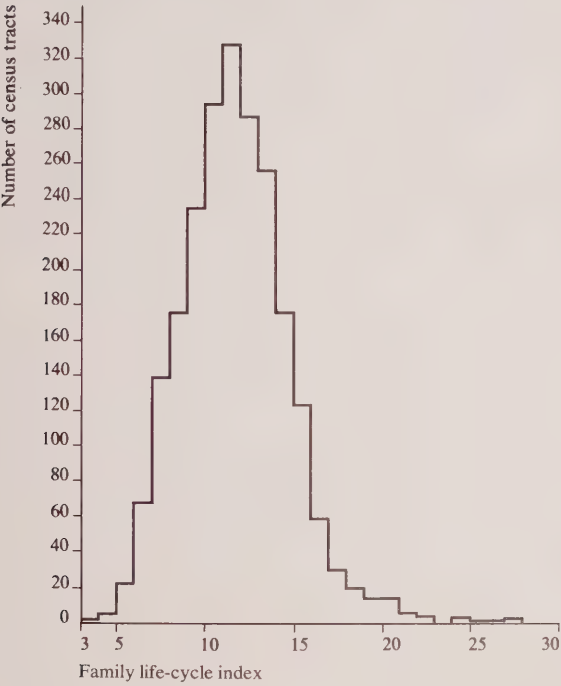
Table 3.4 shows that census tracts with a high percentage of their population under 5 years of age in 1971 tended to have a high proportion aged 5-14 and 25-34, and a low proportion in all age groups over 45 years. In the matrix, there are actually four clusters of age groups, indicative of four stages of the family life cycle:

a) the young family, ages 0-4 and 25-34;
b) the middle-stage family, ages 5-14 and 35-44;
c) the mature family, ages 15-19 and 45-54;
d) older households, ages 55+.

The first three stages are obviously associations of children living with their parents, while children are usually absent from households which have reached the fourth stage. Some associations of age groups are very strong, while others are weaker though still identifiable. The 20-24 age group, however, was not positively correlated with any of the other age groups, except for a very weak association with the 25-34 age group.

In order to construct a family life-cycle index for census tracts, the proportion of the population in each of these four clusters of age groups was weighted and combined to provide a continuous scale of measurement of the age structure of the population. The weighting system was designed to reflect the degree of segregation between each of the four clusters of age

groups. The population of census tracts with a lower value of the family life-cycle index has a younger age profile than tracts with a higher index. Details of the method of calculation are provided in the technical appendix to this chapter.

The family life-cycle index provides at a glance an indication of a census tract's relative position according to the family life-cycle profile of its population. Take, for example, two tracts in the Ottawa-Hull CMA, whose age distributions are as follows:

Age	Tract 44 %	Tract 120 %
0-4	5.2	13.8
5-9	6.6	15.0
10-14	8.2	11.4
15-19	9.1	7.0
20-24	8.7	5.0
25-34	10.1	20.3
35-44	11.0	15.3
45-54	12.9	8.8
55-64	12.2	2.2
65-69	5.4	0.3
70+	10.9	0.7

Table 3.3 Segregation indices of age groups, Census Metropolitan Areas, 1971

Census Metropolitan Area

Age group	Calgary	Edmonton	Halifax	Hamilton	Kitchener	London	Montréal	Ottawa-Hull	Québec	Regina
0-4	.146	.124	.141	.097	.103	.101	.146	.150	.161	.121
5-9	.184	.163	.142	.122	.103	.118	.149	.154	.160	.136
10-14	.159	.150	.120	.120	.085	.106	.125	.122	.108	.117
15-19	.091	.081	.071	.074	.053	.062	.088	.078	.056	.063
20-24	.218	.221	.137	.140	.112	.131	.115	.144	.107	.131
25-34	.123	.115	.107	.097	.090	.104	.115	.112	.101	.109
35-44	.133	.113	.084	.085	.076	.090	.068	.093	.058	.113
45-54	.124	.113	.108	.086	.078	.081	.098	.114	.113	.112
55-64	.250	.213	.191	.154	.160	.173	.193	.222	.215	.206
65-69	.318	.267	.234	.204	.200	.239	.225	.274	.257	.248
70 plus	.381	.282	.273	.270	.240	.306	.277	.349	.320	.277
Average	**.193**	**.167**	**.146**	**.132**	**.118**	.137	**.145**	**.165**	**.151**	**.148**

Source:
Calculated from 1971 census summary tapes by Serge Carlos of Université de Montréal under contract with Ministry of State for Urban Affairs.

Tract 44, about 2¹/₂ miles west of downtown Ottawa, is an area that was built-up in the twenties, thirties and forties, and its population in 1971 was clearly dominated by mature families and old people. For every preschool child, it had three senior citizens. More than half (56 percent) of the population over 5 in 1971 had lived in the same dwelling in 1966. A majority (61 percent) of the dwellings were single-detached houses, and the tract had the second lowest number of persons per room in the Ottawa-Hull CMA.

Tract 120, on the other hand, was a new area in suburban Gloucester township. Almost all the houses were large, single-detached, owner-occupied homes. Many of the houses were built in the sixties, almost all since World War II. The age structure is indicative of a young-family neighbourhood. Only 14 percent of the population over 5 had lived in their 1971 dwelling in 1966. Only 1 out of every 100 residents of tract 120 was over 65 and more than one-quarter of the population was under 10.

We should expect, then, that tracts 44 and 120 would have very different family life-cycle indices, and so they do: 15.4 and 6.4 values which are in the top and bottom 10 percent, respectively to their family life-cycle index. The relative positions of these tracts may be ascertained from Figure 3.3 which shows the frequency distribution of census tracts by their family life-cycle index for all of Metropolitan Canada.

Table 3.5 presents the average value of the family life-cycle indices for census tracts in each CMA, ranked from oldest to youngest. Victoria stands well apart from the other CMAs. Sudbury had the youngest average family life-cycle index, followed closely by Calgary and Edmonton. The values in Table 3.5, of course, closely parallel the data in Table 3.1, showing the detailed age distribution and family size in each CMA.

All CMAs, however, have census tracts spanning nearly the full range of values of the family life-cycle index shown by the census tracts of Metropolitan Canada. In other words, each metropolitan area has young family neighbourhoods, mature family neighbourhoods, etc. The differences among neighbourhoods *within* each metropolitan area according to their family life-cycle index greatly exceed the differences *among* metropolitan areas in their average family life-cycle index.[6] Furthermore, census tracts with high, medium or low family life-cycle indices are not randomly distributed within metropolitan areas. Rather, there is a clear spatial pattern of census tracts within each metropolitan area, when tracts are mapped according to their family life-cycle index. The remainder of this chapter uses the

Table 3.3 *(Concluded)*

St. Catharines-Niagara	St. John's	Saint John	Saskatoon	Sudbury	Thunder Bay	Toronto	Vancouver	Victoria	Windsor	Winnipeg	Average
.054	.113	.095	.123	.080	.097	.138	.149	.164	.096	.118	.120
.070	.079	.114	.126	.134	.099	.150	.160	.142	.104	.143	.131
.069	.068	.089	.093	.121	.082	.145	.149	.120	.104	.121	.113
.045	.087	.057	.081	.055	.055	.099	.094	.077	.069	.065	.071
.082	.076	.098	.108	.120	.066	.136	.171	.129	.095	.155	.128
.061	.135	.072	.109	.050	.066	.134	.129	.106	.073	.107	.101
.068	.050	.060	.091	.075	.066	.077	.078	.094	.080	.108	.084
.039	.076	.063	.104	.111	.053	.104	.090	.084	.082	.088	.091
.089	.110	.124	.181	.207	.134	.184	.146	.102	.105	.174	.168
.140	.166	.144	.235	.257	.190	.237	.190	.189	.188	.214	.220
.188	.220	.213	.259	.265	.216	.286	.245	.288	.220	.255	.268
.082	**.107**	**.103**	**.137**	**.134**	**.102**	**.154**	**.146**	**.136**	**.111**	**.141**	**.136**

Figure 3.4 The family life cycle, Ottawa–Hull CMA, 1971

Figure 3.4 The family life cycle, Ottawa–Hull CMA, 1971

The family life cycle		Population	
young families	○	20,300	○
middle-stage families	○	9,800	○
mature families	○	6,700	○
older households	○	4,700	○
		2,500	○

family life-cycle index to examine the *intra*metropolitan distribution of the population by stage in the life cycle.

3.6   The spatial pattern of age groups

Volume III includes a map of the family life-cycle index by census tracts for each CMA. For mapping purposes, all census tracts in Metropolitan Canada were ranked from lowest to highest according to their family life-cycle index, and the ranked listing was divided into four segments or quartiles, each accounting for one-quarter of the tracts. The first or youngest quartile consists of tracts with a family life-cycle index of less than 9.635. The other quartile break points are 11.582 (the median value) and 13.478. Each map uses the same quartile break points in order to facilitate comparison between metropolitan areas. Figure 3.4 is included in Volume II as an example of the life-cycle maps included for each CMA in Volume III.

It is a widely known fact that, in most cities, age differences in the population are distributed in a concentric zonal pattern. Peripheral areas tend to be dominated by families in the early stages of child-bearing and child-rearing; inner suburbs tend to have a somewhat older age profile which approximates that of the city as a whole; and inner city areas are less family-oriented and have a disproportionate share of the city's elderly population, young singles who have left their parental home and childless couples. The series of life-cycle maps in Volume III confirm that in all metropolitan areas in Canada the family life-cycle index declined outwards from the central city. Although more analysis is needed, it would appear that the zonal arrangement of age groups is strongest in cities with a rapidly-growing, mobile population. This suggestion is consistent with the previous discussion concerning metropolitan differences in levels of age-group segregation.

The patterns shown by the family life-cycle index, however, are rarely perfectly concentric. Several metropolitan areas show secondary concentrations of older population in the periphery, often associated with old towns being absorbed into the metropolitan area. Some of these towns are themselves large enough to have a zonal arrangement of age groups within them (e.g., Oakville and Brampton in the Toronto CMA and Burlington in the Hamilton CMA). Many cities also have sizable areas in the inner city with a fairly young population. Such areas are often associated with a recently arrived immigrant group, or with public housing projects.

Thus, while the general pattern of age-group distribution in metropolitan areas in Canada conforms

Table 3.4 Correlation among age groups by census tract, Metropolitan Canada, 1971*

Age group	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-69	70 +
0-4	.76	.49	−.02	−.19	.37	.19	−.65	−.71	−.64	−.56
5-9		.84	.30	−.53	.08	.46	−.49	−.79	−.76	−.64
10-14			.57	−.58	−.22	.55	−.14	−.63	−.67	−.60
15-19				−.16	−.47	.11	.24	−.20	−.32	−.34
20-24					.28	−.47	−.11	.23	.16	.07
25-34						.06	−.54	−.39	−.32	−.29
35-44							.06	−.47	−.49	−.48
45-54								.59	.39	.22
55-64									.85	.59
65-69										.77

* Values are correlation coefficients (r) among the proportions of a census tract's population in each age group. All census tracts in metropolitan Canada are included.

Source:
Calculated from 1971 census summary tapes by Serge Carlos of Université de Montréal under contract with Ministry of State for Urban Affairs.

to the concentric zonal pattern observed elsewhere, cities vary in the strength of the pattern. Furthermore, it would appear that departures from the general pattern are related to the other two dimensions of differentiation of Canadian society, namely socio-economic status and cultural characteristics. We return to this theme in Chapter 6.

Table 3.5 Average family life-cycle index, Census Metropolitan Areas, 1971

Census Metropolitan Area (ranked)	Average family life-cycle index of census tracts	Standard deviation of family life-cycle index
Victoria	(oldest) 15.1	3.1
Winnipeg	12.8	3.3
Vancouver	12.7	3.0
Thunder Bay	12.4	3.1
Saskatoon	12.3	3.9
Saint John	12.3	2.3
St. Catharines-Niagara	12.0	1.6
Hamilton	11.9	2.8
London	11.9	3.6
Windsor	11.9	2.0
Montréal	11.7	2.9
Québec	11.7	3.8
Regina	11.6	4.3
Toronto	11.5	2.9
Kitchener	11.3	2.4
Halifax	11.1	3.0
Ottawa-Hull	11.0	2.9
St. John's	10.9	2.2
Calgary	10.4	3.0
Edmonton	10.4	2.7
Sudbury	(youngest) 10.1	1.7
Metropolitan Canada	**11.7**	**3.1**

Source:
Life-cycle index of each census tract calculated by Serge Carlos of Université de Montréal under contract with Ministry of State for Urban Affairs.

3.7 Technical appendix

This appendix explains the calculation of the segregation index of an age group, and of the family life-cycle index of a census tract.

The data required for the calculation of an age-group segregation index are the number of persons in that age group and in all other age groups combined, for each census tract in the city. To calculate the segregation index for those aged 0-4 in Regina, for example, one calculates:

a) the proportion of Regina's population of that age group which lives in each census tract; and

b) the proportion of the rest of Regina's population which lives in each census tract.

One then subtracts the second proportion from the first for each tract, and sums either the positive or the negative differences over all the census tracts in Regina. This sum is the segregation index for those aged 0-4 in Regina.

In order to construct a family life-cycle index for census tracts, a matrix of indices of dissimilarity was calculated. An index of dissimilarity is analogous to a segregation index, but compares the distribution of two particular age groups rather than the distribution of one age group and all the rest of the population combined. The index of dissimilarity between the population aged 0-4 and the population aged 5-9, for example, represents the proportion of the population aged 0-4 which would have to relocate to another census tract in order for the distribution of the population aged 0-4 to be the same as the distribution of the population aged 5-9.

The "simplex scaling" method was then applied to the matrix of indices of dissimilarity among all age groups, to devise a system of weights to be attached to the proportion of a census tract's population in each of the four clusters of age groups noted previously. The formula for the index is thus as follows:

Family life-cycle index
$$= 100P_1 + 106.15P_2 + 115.65P_3 + 132.75P_4 - 100.$$

where

$$P_1 = \frac{(\text{pop. aged 0-4} + \text{pop. aged 25-34})}{(\text{pop. total} - \text{pop. aged 20-24})}$$

$$P_2 = \frac{(\text{pop. aged 5-14} + \text{pop. aged 35-44})}{(\text{pop. total} - \text{pop. aged 20-24})}$$

$$P_3 = \frac{(\text{pop. aged 15-19} + \text{pop. aged 45-54})}{(\text{pop. total} - \text{pop. aged 20-24})}$$

$$P_4 = \frac{(\text{pop. aged 55} +)}{(\text{pop. total} - \text{pop. aged 20-24})}$$

Thus a tract whose entire population (excluding any aged 20-24) was either under 5 or aged 25-34 would have an index of 0; and a tract whose entire population (excluding any aged 20-24) was over 54 would have an index of 32.75.

Table A3.1 Housing characteristics by age and sex of household head, Census Metropolitan Areas, 1971*

Table A3.1 *(Continued)*

Census Metropolitan Area	Age or sex of household head†	Single detached dwellings‡ (%)	Rented dwellings§ (%)	Rooms per dwelling¶	Median house value†† ($)	Average cash rent‡‡ ($)
Calgary	Total	60.3	43.2	5.6	22,461	127
	Male	64.9	38.6	5.8	22,912	130
	Female	39.2	64.3	4.6	18,585	118
	Under 25	18.7	91.3	4.1	21,625	124
	25-34	48.9	58.5	5.2	23,709	135
	35-44	75.7	29.0	6.3	24,064	138
	45-54	75.8	25.8	6.2	23,153	129
	55-64	69.2	28.5	5.6	20,571	113
	65-69	60.8	33.1	5.2	18,838	93
	70 plus	58.9	37.9	4.9	16,734	99
Chicoutimi-Jonquière	Total	45.8	46.0	5.5	15,489	83
	Male	47.6	44.4	5.6	15,621	84
	Female	31.8	59.5	4.9	13,511	79
	Under 25	19.3	88.4	3.8	15,326	87
	25-34	31.2	69.6	4.7	16,642	87
	35-44	52.0	39.3	5.7	15,908	84
	45-54	57.7	30.7	6.2	15,440	80
	55-64	52.7	32.3	6.0	14,474	77
	65-69	41.9	36.1	5.5	14,256	71
	70 plus	44.0	38.1	5.8	13,157	66
Edmonton	Total	62.2	44.7	5.4	23,665	124
	Male	66.4	40.2	5.6	24,038	126
	Female	42.2	66.1	4.6	19,924	119
	Under 25	21.9	93.5	3.9	20,971	122
	25-34	49.5	62.3	5.0	24,861	131
	35-44	75.9	31.3	6.1	25,060	131
	45-54	77.8	26.4	6.2	24,221	125
	55-64	72.8	28.2	5.7	21,944	116
	65-69	68.6	30.3	5.2	19,936	102
	70 plus	63.1	35.9	4.9	18,279	95
Halifax	Total	47.7	50.4	5.4	22,820	129
	Male	51.1	47.1	5.5	23,079	131
	Female	31.2	66.1	4.7	20,802	122
	Under 25	10.4	91.5	3.9	18,750	129
	25-34	33.5	67.0	4.9	22,875	136
	35-44	58.1	41.4	5.8	23,659	129
	45-54	63.5	34.5	5.9	23,716	122
	55-64	58.0	36.6	5.6	21,930	123
	65-69	54.3	39.7	5.4	20,677	117
	70 plus	50.8	39.2	5.3	21,131	117
Hamilton	Total	63.6	36.3	5.6	25,172	123
	Male	67.8	32.4	5.7	25,544	127
	Female	41.5	56.5	4.7	21,510	110
	Under 25	15.7	90.6	4.2	23,509	122
	25-34	51.4	52.9	5.3	26,031	129
	35-44	75.2	25.8	6.1	26,719	128
	45-54	76.5	22.8	6.0	25,868	128
	55-64	70.5	26.4	5.6	23,999	119
	65-69	64.6	30.4	5.2	22,357	106
	70 plus	56.8	36.0	5.0	20,873	100
Kitchener	Total	58.2	40.0	5.6	23,968	120
	Male	61.6	36.7	5.7	24,320	123
	Female	39.5	57.9	4.8	20,803	109
	Under 25	13.3	90.8	4.2	23,087	120
	25-34	43.5	56.6	5.2	25,182	126
	35-44	71.3	26.9	6.2	25,653	126
	45-54	74.5	23.3	6.2	24,335	119
	55-64	69.8	25.3	5.7	22,383	115
	65-69	65.6	28.3	5.5	21,255	101
	70 plus	60.6	34.2	5.4	20,172	100
London	Total	60.9	40.2	5.7	20,916	121
	Male	66.2	35.4	5.9	21,447	125
	Female	38.9	60.2	4.8	16,883	111
	Under 25	15.3	90.0	4.3	18,840	120
	25-34	48.7	55.7	5.4	22,218	128
	35-44	72.5	29.7	6.3	22,985	129
	45-54	76.4	24.1	6.3	21,996	122
	55-64	70.6	27.3	5.8	19,279	114
	65-69	65.7	30.7	5.4	17,945	108
	70 plus	59.0	37.4	5.2	15,904	98
Montréal	Total	23.7	64.8	4.9	18,603	99
	Male	26.9	60.6	5.1	18,740	100
	Female	10.1	82.5	4.1	16,601	96
	Under 25	5.0	95.8	3.5	15,548	97
	25-34	18.7	77.3	4.5	18,366	103
	35-44	31.5	56.2	5.4	19,319	100
	45-54	30.3	54.2	5.5	19,133	98
	55-64	23.9	59.0	5.0	17,703	98
	65-69	19.4	62.4	4.7	16,694	94
	70 plus	17.8	64.0	4.7	15,958	97

Census Metropolitan Area	Age or sex of household head†	Single detached dwellings‡ (%)	Rented dwellings§ (%)	Rooms per dwelling¶	Median house value†† ($)	Average cash rent‡‡ ($)
Ottawa-Hull	Total	46.4	49.6	5.5	25,758	135
	Male	51.0	44.8	5.7	26,009	138
	Female	26.3	70.4	4.6	23,581	128
	Under 25	9.6	91.3	4.0	20,720	127
	25-34	33.0	64.5	5.1	25,028	139
	35-44	56.4	39.9	6.1	26,970	141
	45-54	61.1	35.0	6.2	26,807	143
	55-64	53.5	39.5	5.6	25,104	130
	65-69	47.2	44.3	5.2	23,602	123
	70 plus	43.0	49.4	5.0	22,000	125
Québec	Total	35.3	57.9	5.1	19,422	99
	Male	39.7	53.3	5.3	19,615	100
	Female	16.6	77.6	4.3	16,297	95
	Under 25	7.4	94.3	3.4	16,170	104
	25-34	28.3	70.2	4.5	19,771	106
	35-44	46.5	47.7	5.5	20,276	99
	45-54	45.1	46.1	5.8	19,551	94
	55-64	36.6	51.1	5.5	17,902	91
	65-69	29.9	57.1	5.1	17,214	90
	70 plus	26.3	58.5	5.1	16,103	92
Regina	Total	68.5	39.8	5.3	16,443	102
	Male	75.2	32.6	5.5	16,996	108
	Female	43.8	66.3	4.4	12,266	93
	Under 25	29.2	88.9	4.0	13,974	98
	25-34	62.0	52.4	5.1	18,312	111
	35-44	83.6	25.8	6.0	18,928	110
	45-54	81.8	24.2	5.8	17,247	102
	55-64	73.2	29.1	5.3	14,828	99
	65-69	71.9	29.8	5.0	13,224	97
	70 plus	62.8	37.2	4.6	11,790	87
St. Catharines-Niagara	Total	73.6	28.1	5.7	19,966	106
	Male	77.0	25.0	5.8	20,468	109
	Female	56.0	44.2	5.1	16,190	99
	Under 25	27.0	84.0	4.4	17,459	106
	25-34	62.6	45.8	5.5	21,383	111
	35-44	82.6	20.5	6.1	21,964	111
	45-54	84.0	15.9	6.1	20,697	110
	55-64	80.0	17.8	5.8	18,793	103
	65-69	72.9	22.0	5.5	17,387	92
	70 plus	71.0	25.4	5.4	15,956	89

Census Metropolitan Area	Age or sex of household head†	Single detached dwellings‡ (%)	Rented dwellings§ (%)	Rooms per dwelling¶	Median house value†† ($)	Average cash rent‡‡ ($)
St. John's	Total	53.4	33.8	5.9	19,945	104
	Male	55.7	32.4	6.0	20,348	105
	Female	38.9	42.6	5.4	15,640	99
	Under 25	26.6	80.7	4.3	15,858	108
	25-34	46.1	49.3	5.5	20,955	110
	35-44	59.5	30.2	6.3	21,930	104
	45-54	61.3	21.0	6.5	20,844	94
	55-64	59.0	20.5	6.2	18,904	94
	65-69	55.3	20.5	5.9	16,283	85
	70 plus	51.5	22.9	5.7	15,357	98
Saint John	Total	44.8	49.5	5.6	15,528	83
	Male	49.0	45.9	5.7	15,761	85
	Female	28.1	64.0	5.2	13,923	78
	Under 25	16.7	87.3	4.3	12,594	94
	25-34	39.6	60.9	5.3	16,076	92
	35-44	53.6	43.4	6.0	16,294	79
	45-54	53.6	40.0	6.1	16,273	79
	55-64	46.4	43.3	5.8	15,327	76
	65-69	43.7	43.9	5.5	13,450	76
	70 plus	39.1	48.3	5.6	13,352	78
Saskatoon	Total	66.2	40.6	5.4	17,230	101
	Male	71.2	35.2	5.7	17,903	105
	Female	47.8	60.2	4.5	13,102	92
	Under 25	30.6	89.6	4.1	15,078	95
	25-34	58.8	55.7	5.3	19,086	109
	35-44	80.7	25.0	6.2	19,103	107
	45-54	80.8	22.0	6.1	18,412	103
	55-64	74.1	25.6	5.6	15,956	99
	65-69	69.2	27.0	5.1	13,532	91
	70 plus	61.8	37.6	4.7	12,424	85
Sudbury	Total	60.2	41.9	5.1	22,306	121
	Male	62.0	40.6	5.2	22,510	123
	Female	44.0	54.4	4.6	19,746	112
	Under 25	24.0	87.7	3.9	20,298	128
	25-34	49.3	57.0	4.8	22,917	131
	35-44	73.3	29.8	5.6	23,771	120
	45-54	72.7	28.7	5.5	22,643	108
	55-64	66.7	30.3	5.3	20,898	112
	65-69	57.4	29.2	5.0	19,357	96
	70 plus	53.6	34.6	4.9	17,557	101

Table A3.1 *(Continued)*

Census Metropolitan Area	Age or sex of household head†	Single detached dwellings‡ (%)	Rented dwellings§ (%)	Rooms per dwelling¶	Median house value†† ($)	Average cash rent‡‡ ($)
Thunder Bay	Total	76.1	26.6	5.2	16,212	98
	Male	79.6	22.9	5.3	16,709	102
	Female	58.5	44.8	4.7	12,384	88
	Under 25	37.9	79.4	4.0	12,837	96
	25-34	66.9	41.5	5.0	18,013	110
	35-44	84.4	19.9	5.8	19,374	104
	45-54	84.9	14.4	5.6	16,925	95
	55-64	80.8	17.6	5.3	15,324	91
	65-69	77.1	19.1	4.9	12,992	81
	70 plus	72.6	25.5	4.7	11,679	80
Toronto	Total	45.9	45.1	5.6	32,408	151
	Male	49.9	40.3	5.8	32,744	156
	Female	27.1	66.9	4.6	29,803	137
	Under 25	11.4	93.0	4.1	29,033	147
	25-34	30.5	64.2	5.1	32,217	154
	35-44	53.5	34.6	6.1	33,656	155
	45-54	59.5	29.8	6.2	33,336	156
	55-64	54.9	34.2	5.8	31,911	152
	65-69	48.7	38.7	5.4	30,683	139
	70 plus	43.6	44.0	5.1	29,203	130
Vancouver	Total	62.6	41.1	5.2	26,702	130
	Male	69.0	35.0	5.5	27,174	135
	Female	37.9	64.7	4.1	22,704	120
	Under 25	24.4	89.5	3.9	22,914	125
	25-34	53.4	56.2	5.0	26,325	137
	35-44	75.4	29.1	6.1	28,659	140
	45-54	74.5	27.3	5.9	28,642	136
	55-64	68.4	30.5	5.3	26,383	130
	65-69	62.0	36.3	4.7	23,871	118
	70 plus	53.6	44.6	4.3	21,314	111
Victoria	Total	64.6	38.7	5.3	25,007	119
	Male	71.4	32.3	5.6	25,635	124
	Female	42.2	59.6	4.3	21,089	110
	Under 25	25.9	87.0	4.0	20,741	109
	25-34	62.5	49.6	5.3	24,339	125
	35-44	79.7	27.6	6.3	26,735	130
	45-54	78.5	23.2	6.2	27,258	125
	55-64	70.2	27.7	5.3	25,396	118
	65-69	61.0	35.8	4.8	22,658	121
	70 plus	51.5	46.9	4.4	20,461	114

Table A3.1 *(Concluded)*

Census Metropolitan Area	Age or sex of household head†	Single detached dwellings‡ (%)	Rented dwellings§ (%)	Rooms per dwelling¶	Median house value†† ($)	Average cash rent‡‡ ($)
Windsor	Total	71.3	29.6	5.7	22,327	123
	Male	74.9	26.3	5.8	23,050	127
	Female	55.0	44.5	5.0	18,518	111
	Under 25	30.8	80.7	4.5	19,295	127
	25-34	61.2	45.1	5.5	23,869	130
	35-44	80.8	21.5	6.2	25,380	127
	45-54	82.5	16.9	6.1	23,646	121
	55-64	79.1	18.1	5.7	21,315	121
	65-69	73.0	20.6	5.4	19,260	115
	70 plus	68.2	26.5	5.2	17,953	98
Winnipeg	Total	63.4	41.0	5.1	17,780	108
	Male	69.2	34.9	5.4	18,382	113
	Female	41.1	64.3	4.3	14,253	98
	Under 25	19.5	90.5	3.9	15,364	108
	25-34	53.6	55.9	4.9	19,719	116
	35-44	77.1	29.2	5.8	20,404	113
	45-54	77.9	24.8	5.7	18,735	110
	55-64	71.7	28.6	5.2	16,472	107
	65-69	63.5	35.0	4.8	15,033	99
	70 plus	55.8	44.1	4.5	13,189	92

* Data in this table refer only to private households in private dwellings. Collective households in collective dwellings are excluded (e.g., hotels, large lodging houses, institutions, camps).

† A household consists of a person or group of persons occupying one dwelling. The household head is the husband if both husband and wife are present, the parent (regardless of age or dependency) if living with unmarried children, or any member of a group sharing a dwelling equally.

‡ A dwelling refers to a structurally separate set of living quarters with a private entrance or from a common hallway or stairway inside the building, i.e., the entrance must not be through someone else's living quarters. A single detached dwelling is a structure with one dwelling only, separated by open space from all other structures except its own garage or shed. This column gives single detached dwellings as a percent of occupied private dwellings, for each age or sex category.

§ A rented dwelling refers to an occupied dwelling which is not owned by any member of the household. Included are living quarters provided rent free if the quarters are not owned by any member of the household. This column gives rented dwellings as a percent of occupied private dwellings, for each age or sex category.

¶ A room is an enclosed area within a dwelling which is finished and suitable for year-round living. Partially divided L-shaped rooms are considered to be separate rooms if they are considered to be such by the respondent (e.g., L-shaped dining rooms-living room arrangement(s). Not counted as rooms are bathrooms, closets, pantries, halls and rooms used solely for business purposes.

†† Median house value relates to single detached, owner-occupied, non-farm dwellings and is based on the amount expected by the owner if the dwelling were to be sold to a willing buyer. The median value is the value below which half of such houses fall.

‡‡ Average cash rent is the dollar amount required to secure occupancy, but not ownership, of a tenant-occupied non-farm dwelling for the month prior to enumeration day.

Source:
Canada, Statistics Canada, *1971 Census of Canada: Housing: Dwelling Characteristics by Age and Sex of Household Head*, Bulletin 2.4-6, Cat. No. 93-739 (Ottawa: Information Canada, 1975).

Notes

[1] Although Table 3.1 suggests that the average family size in Metropolitan Canada remained at 3.6 persons, it actually declined from 3.62 to 3.57, if taken to two decimals.

[2] The reader should note that a household is not the same as a family. Definitions are provided in the footnotes to the relevant tables.

[3] The index was devised by O.D. Duncan and B. Duncan, "Residential Distribution and Occupational Stratification", *American Journal of Sociology*, Vol. 60 (1955), pp. 493-506.

[4] Serge Carlos of the Université de Montréal performed the calculation of the indices under contract with the Ministry of State for Urban Affairs. Population is measured on a logarithmic scale, since the expected difference in segregation between cities of, say, 100,000 and 200,000 is expected to be the same as the difference in segregation between cities of 1,000,000 and 2,000,000.

[5] In a statistical sense, population size and the percentage of nonmovers together will "explain" 65 percent of the variance among metropolitan areas in their average levels of age-group segregation. Measures of recent growth and dwelling types add very little to the level of explanation, once population size and mobility are taken into account.

[6] The standard deviation of the family life-cycle index of census tracts is almost as great within most CMAs as it is for all the census tracts in Metropolitan Canada considered together (Table 3.5).

4 Income disparities in Metropolitan Canada

4.1   Introduction

Neighbourhood differences in the age structure of the population are less pronounced, less visible, and perhaps less important than neighbourhood differences in income levels. The very appearance of a neighbourhood brands it as the domain of the poor, the middle income or the rich, even to the eyes of the casual observer. A Shaughnessey, a Westmount and a Rosedale are so blatantly dissimilar from an Oppenheimer Park, a St-Henri and a Don Mount that one does not have to be a resident of Vancouver, Montréal or Toronto to know from their appearance that money is the distinguishing mark of these neighbourhoods. Metropolitan poverty and wealth are highly visible in the urban landscape, all the more so because they are concentrated into particular neighbourhoods.

One indication of wealth and poverty which the census provides is the data on family income levels. It is important to understand at the outset, however, that poverty and wealth are not related in any simple direct way to income. Many retired people, for example, have low incomes but their wealth, which is defined in terms of assets, bonds, etc., is sometimes substantial. A family's income during a single year is only one indication of its wealth or poverty. We are speaking loosely, therefore, when we refer to a neighbourhood as rich or poor on the basis of its average family income. Data on home-ownership rates and on median house values are also available for census tracts, and should be used as corroborative evidence of levels of poverty and wealth. To be absolutely correct, one should use phrases such as "low-income" or "high-income" instead of "poor", "wealthy" or "rich", when income is the measure used. There is little doubt, however, that census tracts with very low average family incomes have a high incidence of poverty, and very high-income tracts have a high incidence of wealth.

Cities are themselves differentiated by their income levels and associated measures of occupation, education and other characteristics associated with the economic dimension of social differentiation. In this chapter, these differences are first explored at the metropolitan area level before turning to the neighbourhood or census tract level of investigation. Data are also provided on the segregation of income groups in metropolitan areas, as a background to the subsequent discussion of the spatial pattern of low-income and high-income neighbourhoods. Further information on how the economic dimension relates to the family life cycle and the cultural mosaic is included in Chapter 6.

4.2   Metropolitan differences in income and education

The 1971 census provides several measures of income: family and household income, employment income, individual income, income of family heads and of household heads, etc. Since all these measures are highly correlated, and since it is impossible in a volume of this size to discuss all of them, family income is presented as the best single income measure by which metropolitan areas and census tracts are compared. The family is the basic unit of Canadian society, and most expenditures are made with the family's budget in mind, rather than on a per capita basis. Total family income is also a more meaningful measure than employment income alone since many families have income from government transfer payments, interest, etc. The reader should bear in mind, however, that the income of persons not in families is excluded from consideration, and that a rather conservative definition of family is used. Unrelated individuals, distant relatives and married sons and daughters living with their parents are not considered to be family members. In particular neighbourhoods, such as those ethnic neighbourhoods where extended families are common, this distinction is an important one.

Table 4.1 presents the average family income in each metropolitan area in 1961 and 1971, expressed both in current dollars and as a percentage of the Canadian average family income in each year. The family income distribution across five categories in each CMA in 1971 is shown in Table 4.2. Close attention should be paid to the footnotes providing definitions of family and family income, and changes in definition and coverage between 1961 and 1971.

Table 4.1 Average family income, Census Metropolitan Areas, 1961 and 1971

Census Metropolitan Area	Average family income* 1971 $	1971 Rank	1971 % of mean†	1961 $	1961 Rank	1961 % of mean‡
Calgary	10,943	5	114	6,351	3	117
Chicoutimi-Jonquière	9,162	20	95	5,681	15	104
Edmonton	10,660	10	111	5,982	8	110
Halifax	10,176	12	106	5,620	16	103
Hamilton	10,757	7	112	6,031	5	111
Kitchener	10,661	9	111	5,911	9	108
London	10,763	6	112	5,837	12	107
Montréal	10,292	11	107	6,017	6	110
Ottawa-Hull	12,010	1	125	6,575	1	121
Québec	10,159	14	106	5,720	14	105
Regina	9,637	18	100	6,005	7	110
St. Catharines-Niagara	9,997	15	104	5,576	18	102
St. John's	8,488	22	88	4,808	22	88
Saint John	8,821	21	92	5,032	21	92
Saskatoon	9,479	19	99	5,797	13	106
Sudbury	11,739	3	122	6,167	4	113
Thunder Bay	10,165	13	106	5,538	19	102
Toronto	11,841	2	123	6,509	2	119
Vancouver	10,664	8	111	5,883	10	108
Victoria	9,921	17	103	5,581	17	102
Windsor	11,281	4	118	5,383	20	99
Winnipeg	9,989	16	104	5,874	11	108
Metropolitan Canada	**10,788**		**112**	**6,053**		**111**
Nonmetropolitan Canada	**8,062**		**84**	**4,582**		**84**
Canada	**9,600**		**100**	**5,449**		**100**

* A census family consists of a husband and wife (with or without children who have never been married, regardless of age) or a parent with one or more children never married, living in the same dwelling. A family may consist also of a man or woman living with a guardianship child or ward under 21 years of age for whom no pay was received. Income refers to the total income received during 1970 from wages and salaries, business or professional practice, farm operations, family and youth allowances, government old age pensions, other government payments, retirement pensions from previous employment, bond and deposit interest and dividends, other investment sources, and other sources. Family income refers to the sum of incomes received by all members of the family 15 years of age and over.

† Average family income as a percentage of the average family income for Canada ($9,600)

‡ Average family income as a percentage of the average family income for Canada ($5,449)

Coverage in 1961 was limited to private non-farm households. The 1961 data exclude farm households, institutions, collective households such as hotels and large lodging houses, and all households in the Northwest Territories. In addition, families away from their usual place of residence (e.g., families travelling abroad or families of military personnel stationed in Europe) were excluded from the 1961 sample.

All 1961 data were retabulated on the basis of 1971 definitions of CMAs, insofar as this task is possible using unpublished data for census subdivisions. In only two metropolitan areas was it necessary to exclude more than one percent of the 1961 population from the income data coverage area: St. John's and Sudbury, where 1.4 percent and 3.2 percent (respectively) of the 1961 population resided in areas for which no family income data were available.

Sources:
Statistics Canada, *1971 Census of Canada: Families: Incomes of Families, Family Heads and Non-family Persons*, Bulletin 2.2-12, Cat. No. 93-724 (Ottawa: Information Canada, 1975);

Canada, Dominion Bureau of Statistics, *1961 Census of Canada: Population Sample: Family Incomes by Size, Type and Composition of Family*, Bulletin 4.1-3, Cat. No. 98-503 (Ottawa: Queen's Printer, 1964);

1961 census microfilm tabulations.

The income differential between Metropolitan and Nonmetropolitan Canada scarcely changed between 1961 and 1971. Metropolitan areas as a whole continued to have family incomes 11-12 percent above the Canadian average, and nonmetropolitan incomes were 16 percent below the Canadian average in both years. In 1971, four metropolitan areas (St. John's, Saint John, Chicoutimi-Jonquière and Saskatoon) had average family incomes below the Canadian average. Among the metropolitan areas, St. John's retained the unenviable distinction of having the lowest income, only 88 percent of the Canadian average. The average family income in Saint John also remained the second lowest, at 92 percent of the Canadian average. At the upper end of the scale, Ottawa-Hull and Toronto maintained first and second place, and their incomes both increased relative to the Canadian average. Income disparities among metropolitan areas apparently increased slightly over the decade, while the metropolitan-nonmetropolitan disparity showed virtually no change.[1]

Average family income, when expressed as a percentage of the Canadian average, changed little in most metropolitan areas between 1961 and 1971. A few areas, however, showed quite substantial income gains or losses relative to the Canadian average. The relative declines in Chicoutimi-Jonquière, Regina and Saskatoon were the largest, while London, Sudbury and Windsor experienced the largest relative gains. Average family incomes in Windsor, whose economy was particularly depressed during the recession in the late fifties

Figure 4.1 Average family income and education levels. Census Metropolitan Areas, 1971

Family income index *

130

Ottawa—Hull

Toronto

Sudbury

120

Windsor

Calgary

Hamilton   London
110   Kitchener   Edmonton   Vancouver

Montréal
Thunder Bay   Québec   Halifax

St. Catharines—Niagara   Winnipeg   Victoria

100   Regina
Saskatoon

Chicoutimi—Jonquière

Saint John

90
St. John's

18   20   30   40   50   60

Education index †
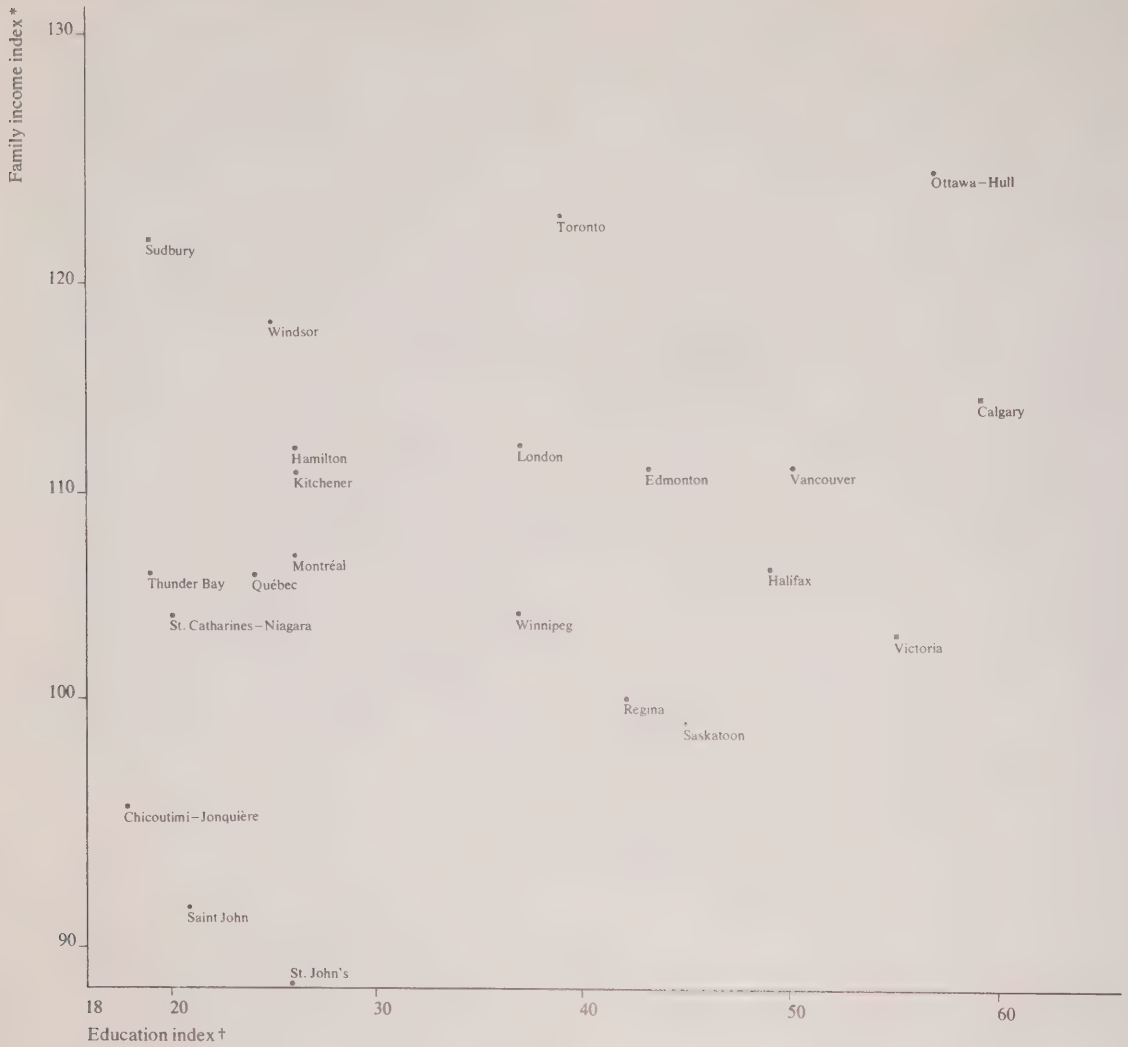
* Average family income as a percent of
Canadian average.
† See Table 4.3 for definition.

Sources: See Tables 4.1 and 4.3.

and early sixties, increased from 99 percent to 118 percent of the Canadian average.

In Volume I of this series, the relationship between income and education levels was explored. It was noted that a family's income is strongly related to the education level of the family head. Families with well-educated heads usually have high incomes, while heads of low-income families usually have little formal education.

Information on the education levels of each CMA in 1961 and 1971 is found in Table 4.3. Education levels in both the nonmetropolitan and metropolitan portions of the country improved considerably over the decade. The differences in the percentage of the population with only an elementary education and in the percentage with some secondary schooling narrowed, but the metropolitan areas increased their lead over non-metropolitan areas in the percentage who had ever attended university. Differences between metropolitan areas in their education levels also remained substantial.

The education index included in Table 4.3 provides a summary measure of the education levels of the population in each CMA. The index is the number of persons who had ever attended university for every 100 persons who had not proceeded beyond an elementary

(grade 8) education. Only persons aged 5 and over not attending school were considered in the calculation. Metropolitan areas are highly differentiated according to this index, as they are according to each of the other education measures in the table. In 1971, for example, the index ranged from only 18 in Chicoutimi-Jonquière to 59 in Calgary. The index in most CMAs doubled between 1961 and 1971, and there was little change in their relative positions according to their education index.

Figure 4.1 helps to portray the relative education levels and income levels of the metropolitan areas in 1971, and the weakness of the relationship between education and income at the metropolitan area level. In view of the fairly strong association between education and income at the family level, it is surprising to find that the education level of a metropolitan area is so weakly related to its average family income. The relationship is complicated by differences among metropolitan areas in industrial structure, the age of the population, labour force participation rates, unemployment rates and regional location. These relationships have been explored at greater length in Volume I and will not be elaborated further here. Figure 4.1 is included as a warning that metropolitan income differences are not explained by differences in education levels. No such

Table 4.2 Family income distribution, Census Metropolitan Areas, 1971*

Census Metropolitan Area	No. of families	Total family income (%)					Average ($)
		Under $5,000	$5,000-7,999	$8,000-9,999	$10,000-14,999	$15,000 plus	
Calgary	97,155	15.2	19.2	17.0	30.7	17.8	10,943
Chicoutimi-Jonquière	28,310	19.0	26.5	19.7	23.4	11.5	9,162
Edmonton	118,320	16.3	19.7	17.1	29.9	16.9	10,660
Halifax	51,675	15.8	24.4	18.0	27.5	14.3	10,176
Hamilton	125,010	14.2	18.7	18.3	32.3	16.5	10,757
Kitchener	56,475	12.7	21.1	19.2	31.7	15.3	10,661
London	70,710	15.0	20.2	17.1	31.3	16.5	10,763
Montréal	646,885	18.4	23.4	16.3	25.7	16.2	10,292
Ottawa-Hull	141,475	13.1	17.2	14.4	30.0	25.3	12,010
Québec	106,015	16.9	26.3	17.2	24.1	15.5	10,159
Regina	33,590	19.8	23.0	17.8	27.0	12.4	9,637
St. Catharines-Niagara	76,355	16.2	22.3	19.1	28.9	13.5	9,997
St. John's	28,345	28.0	28.1	15.3	19.4	9.3	8,488
Saint John	24,310	22.4	28.2	17.7	22.5	9.1	8,821
Saskatoon	30,175	20.7	24.3	18.6	24.9	11.5	9,479
Sudbury	36,050	9.7	14.2	18.8	36.6	20.7	11,739
Thunder Bay	27,180	16.7	19.4	19.2	30.2	14.6	10,165
Toronto	652,950	13.4	17.3	15.3	31.9	22.1	11,841
Vancouver	267,485	18.4	18.6	16.6	29.1	17.4	10,664
Victoria	50,195	19.1	21.5	17.6	27.7	14.1	9,921
Windsor	62,405	14.9	15.9	15.8	32.2	21.2	11,281
Winnipeg	132,535	17.4	23.0	18.7	27.5	13.4	9,989
Metropolitan Canada	**2,863,605**	**16.2**	**20.5**	**16.6**	**28.9**	**17.8**	**10,788**
Nonmetropolitan Canada	**2,212,480**	**31.8**	**25.2**	**14.7**	**19.5**	**8.8**	**8,062**
Canada	**5,076,085**	**23.0**	**22.5**	**15.8**	**24.8**	**13.9**	**9,600**

* For definitions of family and income, see
Table 4.1.

simple explanation is valid. Nor will the industrial profile, labour force participation rates, unemployment rates, ethnic origin, age structure or regional location *alone* explain urban differences in income levels. The relationships are very complex. The interested reader is referred to Chapter 4 of Volume I for a more complete discussion. The main concern of the present chapter is intrametropolitan income differences, to which we now turn.

4.3 Segregation of income groups

Neighbourhoods are associated with families with particular income levels. Consequently, the family income distribution of few census tracts would approximate the distribution for Metropolitan Canada as a whole. Some income groups, however, are more segregated than others, and some metropolitan areas exhibit a greater degree of segregation of family income groups than others. Before examining differences among income groups and metropolitan areas in their levels of segregation, however, a few more general comments on the overall level of income disparities within metropolitan areas are in order.

Neighbourhoods are much more highly differentiated than entire metropolitan areas according to their average family income. While the average family income in 1970 in Metropolitan Canada ranged from $8,488 (St. John's) to $12,010 (Ottawa-Hull), average family income by census tract ranged from $3,500 to $55,200! Figure 4.2 shows the frequency distribution of census tracts by average family income. Some 235 low-income census tracts (10.4 percent) had an average family income of less than $7,500 and 190 high-income

Table 4.3 Education of nonschool adult population, Census Metropolitan Areas, 1961 and 1971*

| Census Metropolitan Area | Highest level of schooling (%) | | | | | | | | Education index‡ | |
| | Elementary† | | Secondary | | Some university | | University | | | |
	1971	1961	1971	1961	1971	1961	1971	1961	1971	1961
Calgary	24.2	30.6	61.7	59.9	6.9	4.5	7.3	4.9	59	31
Chicoutimi-Jonquière	45.1	54.9	46.9	40.6	4.1	1.9	3.9	2.6	18	8
Edmonton	27.8	36.5	60.1	55.2	5.7	4.1	6.4	4.2	43	23
Halifax	27.3	33.2	59.4	58.5	6.5	4.3	6.8	4.0	49	25
Hamilton	34.3	44.1	56.8	50.4	4.5	2.5	4.3	3.0	26	13
Kitchener	35.7	47.9	55.1	47.2	4.5	2.2	4.6	2.7	26	10
London	28.4	37.6	61.1	55.9	4.9	2.8	5.6	3.7	37	17
Montréal	44.0	48.7	44.5	43.8	5.9	3.5	5.5	3.9	26	15
Ottawa-Hull	28.9	38.0	54.7	51.6	6.9	4.1	9.5	6.2	57	27
Québec	42.5	50.7	47.4	42.6	4.5	3.1	5.7	3.6	24	13
Regina	30.6	36.2	56.8	55.7	7.0	3.9	5.7	4.2	42	23
St. Catharines-Niagara	37.2	46.6	55.5	48.3	4.0	2.6	3.4	2.5	20	11
St. John's	37.0	44.5	53.4	50.4	6.0	3.5	3.6	1.7	26	12
Saint John	38.6	45.9	53.2	48.6	4.7	3.2	3.5	2.3	21	12
Saskatoon	32.0	38.6	53.6	52.5	7.4	4.2	7.0	4.7	45	23
Sudbury	40.3	52.6	51.9	43.0	4.2	2.2	3.6	2.1	19	8
Thunder Bay	40.8	49.8	51.4	46.2	4.4	2.2	3.4	1.9	19	8
Toronto	31.5	39.9	56.2	52.1	6.0	3.5	6.3	4.5	39	20
Vancouver	26.3	33.3	60.5	57.6	7.4	5.2	5.7	3.8	50	27
Victoria	23.2	28.6	64.2	61.4	7.3	6.1	5.4	3.9	55	35
Windsor	36.4	45.6	54.5	48.8	5.2	2.9	3.9	2.7	25	12
Winnipeg	31.2	34.2	57.2	57.4	5.9	4.7	5.7	3.6	37	24
Metropolitan Canada	34.5	41.8	53.8	50.6	5.9	3.7	5.8	3.9	34	18
Nonmetropolitan Canada	47.2	57.7	46.5	38.1	3.6	2.2	2.7	1.6	13	7
Canada	40.0	49.3	50.6	44.9	4.9	3.0	4.4	2.8	23	12

* This table presents the highest level of schooling ever attended by the population aged five and over not attending school. Post-secondary, non-university education is ignored, except insofar as persons attending such institutions were considered to be attending school in 1971 (but not in 1961).

Persons were classified according to whether or not they had reported full-time attendance at school at any time since September, 1970 (or 1960 in the 1961 census). Only persons *not* reporting full-time attendance are included in the data in this table. In 1961, school attendance was restricted to attendance at elementary and secondary schools and universities, and did not include non-university, post-secondary institutions such as technical schools, community colleges, CEGEPs, teachers' colleges, nursing schools, trade schools, business schools, etc. All data are on the basis of 1971 definitions of CMAs.

† Includes no schooling and kindergarten. Many persons with no schooling would be five or six years old.

‡ Number of persons who had ever attended university for every 100 persons who had not proceeded beyond an elementary (grade 8) education. Only persons aged five and over not attending school are considered in the calculation.

Sources:
Canada, Statistics Canada, *1971 Census of Canada: Population by School Attendance and Level Of Schooling*, Bulletin AP-13, Cat. No. 92-764 (Ottawa: Information Canada, 1973);

Canada, Dominion Bureau of Statistics, *1961 Census of Canada: Population: School Attendance and Schooling*, Bulletin 1.2-10, Cat. No. 92-550 (Ottawa: Queen's Printer, 1963);

1961 census microfilm tabulations.

tracts (8.4 percent) had an average family income in excess of $15,000.[2] The frequency distribution was positively skewed (i.e., with a long tail towards the upper end of the scale).

Average family incomes of census tracts in most metropolitan areas spanned most of the range of values shown for tracts across Metropolitan Canada. In other words, all metropolitan areas, regardless of their average income levels, have neighbourhoods which, by the standards of Metropolitan Canada, are rich or poor. St. John's, for example, the metropolitan area with the lowest income, had a census tract with an average family income of almost $19,000; and Ottawa-Hull, the highest-income CMA, had several census tracts with an income of under $7,500. Saskatoon and Thunder Bay were the only metropolitan areas which did not have a census tract in the $15,000+ category. All metropolitan areas except Kitchener and Sudbury had tracts with an average family income under $7,500.

Not all income groups in a metropolitan area, however, are equally segregated. The segregation index of each of six family-income categories in each CMA is shown in Table 4.4. The segregation index for an income group is comparable to the segregation index for an age group which was discussed in Chapter 3, and represents the proportion of the families in that income group which would have to move to a different census tract in order for that group's distribution to be the same as the distribution of all other families across the metropolitan area. In Calgary, for example, the index of .325 indicates that 32.5 percent of the families in the $15,000+ category would have to move to a different tract if their distribution were to be the same as that of all other families in Calgary.

Figure 4.2 Frequency distribution of census tracts by average family income, Metropolitan Canada, 1971
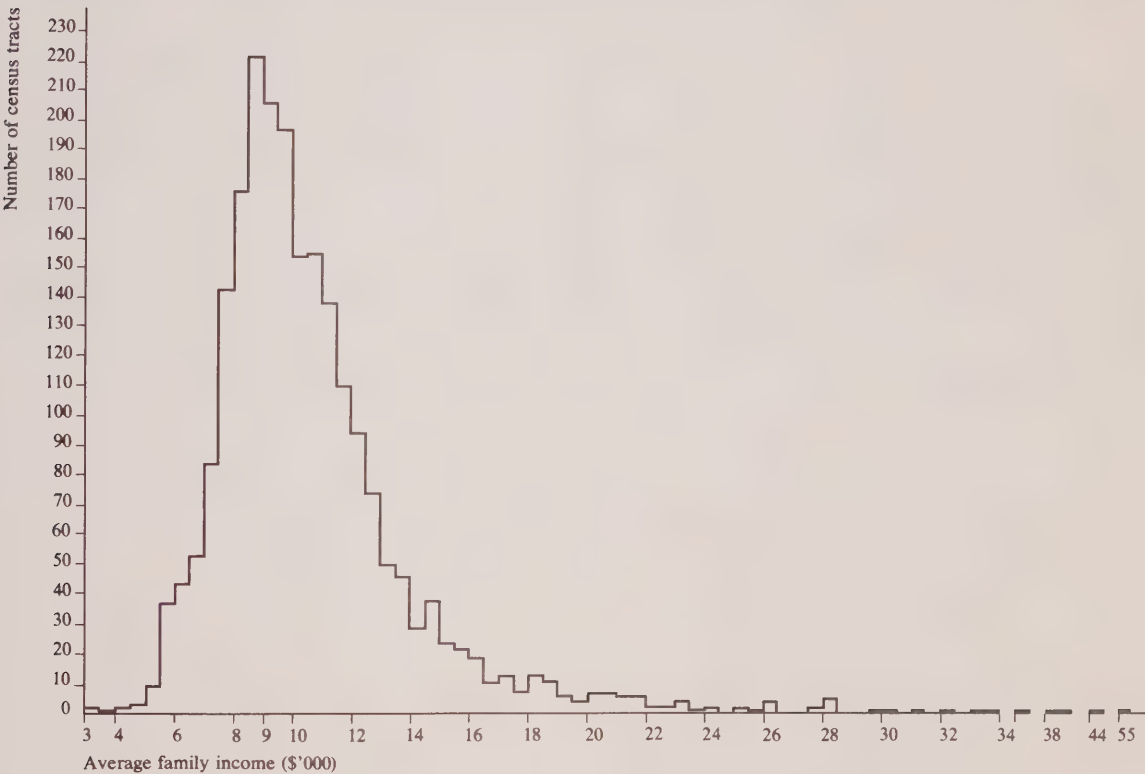
In all metropolitan areas, families with incomes under $4,000 in 1970 and those with incomes over $15,000 were more highly segregated than the middle-income families. Except in Windsor and Thunder Bay, families in the $15,000+ category were the most segregated group.[3] The average segregation index for this group (.298) was even higher than the average index for those aged 70+, the most segregated age group (.268). The highest segregation index of all was .375 for families with an income over $15,000 in Regina.

The bottom row of Table 4.4 provides an indication of how metropolitan areas differ in their average level of segregation of family income groups. This average, however, may be unduly influenced by the segregation indices for the two lowest income groups, both of which account for very small proportions of the families in Metropolitan Canada and are somewhat unreliable,

given the problems of sample size and random rounding. An alternative measure of the level of neighbourhood differentiation by income is therefore provided. This measure is the standard deviation of the average family income of census tracts. The standard deviation is a measure of the amount by which average family income in the census tracts in a metropolitan area tends to differ from the average for that area. The formula is included in a footnote to Table 4.5, which presents this measure for each CMA.

The standard deviation of the average family income of census tracts in each metropolitan area depends upon:

a) the amount of income disparity among the families living in the metropolitan area; and

b) the degree to which families of different incomes are segregated from each other (i.e., the extent

Table 4.4 Segregation indices of family income groups, Census Metropolitan Areas, 1971

Census Metropolitan Areas

Family income group ($)	Calgary	Edmonton	Halifax	Hamilton	Kitchener	London	Montréal	Ottawa-Hull	Québec	Regina
1-1,999	.299	.243	.198	.245	.205	.254	.238	.280	.237	.231
2,000-3,999	.279	.233	.230	.243	.181	.243	.237	.294	.226	.235
4,000-5,999	.226	.198	.163	.190	.144	.189	.192	.264	.185	.192
6,000-9,999	.154	.127	.151	.134	.105	.123	.144	.188	.143	.132
10,000-14,999	.154	.140	.136	.149	.090	.135	.158	.132	.138	.164
15,000 plus	.325	.308	.326	.276	.238	.320	.356	.343	.313	.375
Average	.228	.208	.201	.206	.161	.211	.221	.250	.207	.222

Source:
Calculated from 1971 census summary tapes
by Serge Carlos of Université de Montréal
under contract with Ministry of State for
Urban Affairs.

to which they tend to live in different census tracts).

Because of these relationships, the standard deviation of average family income of census tracts is closely related to the average segregation index of the six family-income groups, which is repeated in Table 4.5. These two measures of intrametropolitan income disparities, however, are not perfectly correlated.[4] The average segregation index does not take into account the income distribution within each family-income category. A family income of $15,000, for example, is treated no differently than a family income of $150,000 in calculating a segregation index where the $15,000+ category is the highest. Furthermore, the standard deviation of the average family income of census tracts assigns equal weights to each tract, regardless of the number of families living there. The 1971 census provides unreliable estimates of family income in tracts with only a few families. These small tracts also exert undue influence on the value of the standard deviation of the average family income of census tracts.[5]

On balance, however, the standard deviation of the average family income of census tracts provides a better indication of the overall level of income differentiation of neighbourhoods in a metropolitan area than the average of the six segregation indices of family income groups. Most of the following discussion, therefore, focuses on this alternative measure.

As in the case of age-group segregation, a positive relationship between city population and the level of neighbourhood income differences is to be expected. A census tract of 5,000 people in a large city has a higher probability of having a very specialized income distribution than a census tract in a smaller city. Only a large city is likely to have enough very high-income

Table 4.4 *(Concluded)*

St. Catharines - Niagara	*St. John's*	*Saint John*	*Saskatoon*	*Sudbury*	*Thunder Bay*	*Toronto*	*Vancouver*	*Victoria*	*Windsor*	*Winnipeg*	*Average*
.150	.259	.305	.192	.216	.216	.265	.213	.198	.252	.312	.235
.139	.252	.223	.186	.173	.174	.260	.216	.185	.204	.260	.223
.147	.194	.157	.127	.131	.133	.222	.178	.172	.176	.197	.180
.091	.089	.103	.106	.124	.062	.167	.127	.104	.122	.123	.125
.098	.235	.149	.152	.063	.108	.147	.133	.103	.094	.161	.135
.213	.354	.308	.289	.220	.198	.324	.304	.273	.238	.348	.298
.140	**.231**	**.208**	**.175**	**.155**	**.149**	**.231**	**.195**	**.173**	**.181**	**.234**	**.199**

families and enough very low-income families for the extremes of the distribution shown in Figure 4.2 to be reached. Another contributing factor to the expected relationship between size and neighbourhood income differences may be that the perceived need to use the neighbourhood as a status symbol in a very large impersonal city is greater than in a smaller city.

In Figure 4.3, where the standard deviation of the average family income of census tracts is plotted against the logarithm of population in 1971, we see that there is in fact a positive relationship between these two measures. Average family incomes of census tracts vary more in larger cities. In a statistical sense, population alone will explain 66 percent of the variance among metropolitan areas in the amount of income differences among their neighbourhoods. But there is still a good deal of residual variance which is not explained by

population size. For example, the population of St. John's has a very high level of income differences among census tracts, whereas tracts in St. Catharines-Niagara have family incomes much more similar than one would expect in a metropolitan area of 300,000.

The overall level of income disparities among families in a city (as measured by its Gini coefficient)[6] is also related to the amount of income differentiation of neighbourhoods (as measured by the standard deviation of the average family income of census tracts).[7] In other words, metropolitan areas which have a high degree of income disparity among families have neighbourhoods which are highly differentiated according to income. This statement is not a tautology. After all, it is quite possible for a city to have an abundance of families in all income groups from rich to poor, and still have neighbourhoods which differ little in their average family in-

Figure 4.3 Income differences of census tracts and population, Census Metropolitan Areas, 1971

come, provided that families do not segregate them-selves into neighbourhoods according to their income level. But in fact, in Metropolitan Canada there is a relationship between the level of income disparity among *families* and the amount of income disparity among *neighbourhoods* (census tracts).

Canada does have metropolitan areas, how-ever, which deviate from this rule. Windsor is such an area. It has a high level of family-income disparity but its neighbourhoods show relatively little difference in their average family income. Windsor, as noted earlier, had the highest rate of increase in family incomes of all the metropolitan areas between 1961 and 1971. Not everyone, however, benefited from the general in-creases in income, and by 1971 Windsor had the second highest Gini coefficient of income disparity. Moreover, it also had the second lowest rate of population mobility

in the 1966-1971 period. Windsor residents in higher income categories in 1971 had not yet fully adjusted to their new income levels by sorting themselves out into high-income neighbourhoods.

St. John's, on the other hand, showed a high degree of income differentiation of census tracts, given its low Gini coefficient. While St. John's may have few well-to-do families, the ones it does have are among the most highly segregated income groups in Canada, and St. John's low-income families are also more highly segregated than in most metropolitan areas.

In sum, large population and high degrees of family income disparity in a metropolitan area are both associated with high levels of neighbourhood differ-ences according to family income. It should be pointed out, however, that population size is itself a determin-ant of the amount of income disparity among families in

Table 4.5 Intrametropolitan income disparity, 1971

Census Metropolitan Area	Average family income ($)	Gini coefficient of income disparity*	Mean of average family income of census tracts ($)†	Standard deviation of average family income of census tracts ($)‡	Mean segregation index of six family income groups ($)§
Calgary	10,943	1.05	10,824	2,930	.228
Chicoutimi-Jonquière	9,162	0.96	—	—	—
Edmonton	10,660	1.05	10,486	3,156	.208
Halifax	10,176	1.00	10,570	2,936	.201
Hamilton	10,757	1.02	10,649	2,413	.206
Kitchener	10,661	0.98	10,614	2,114	.161
London	10,763	1.03	11,060	3,092	.211
Montréal	10,292	1.06	10,068	4,159	.221
Ottawa-Hull	12,010	1.10	11,719	3,865	.250
Québec	10,159	1.02	9,749	2,941	.207
Regina	9,637	1.01	9,344	2,237	.222
St. Catharines-Niagara	9,997	0.99	10,038	1,770	.140
St. John's	8,488	0.98	8,617	3,234	.231
Saint John	8,821	0.95	8,694	2,329	.208
Saskatoon	9,479	1.00	9,242	1,889	.175
Sudbury	11,739	0.99	11,779	1,715	.155
Thunder Bay	10,165	1.02	9,946	1,508	.149
Toronto	11,841	1.07	11,951	4,612	.231
Vancouver	10,664	1.09	10,831	3,362	.195
Victoria	9,921	1.04	10,033	2,426	.173
Windsor	11,281	1.09	11,026	2,206	.181
Winnipeg	9,989	1.00	9,743	3,195	.234
Metropolitan Canada	**10,788**	**1.06**	**10,654**	**3,732**	**.199**

*Gini coefficient $= \dfrac{2}{n(n-1)} \sum\limits_{j=1}^{4} \sum\limits_{k=1}^{4} \mid x_j - x_k \mid \quad f(x_j) f(x_k)$ where $j < k$

where
n = number of families
$f(x_j)$ = number of families in income category j
$f(x_k)$ = number of families in income category k
x_j = income category j
x_k = income category k

Four income categories were used: under $5,000; $5,000-$9,999; $10,000-$14,999; $15,000 and over. Therefore, x_j and x_k can assume values from 1 to 4. The gini coef-ficient is expressed in numbers of income categories, each corresponding roughly to $5,000. An index of 1.05 for Calgary, for example, means that two families randomly selected in Calgary would, on the average, be separated by 1.05 income categories.

† Excluding all census tracts with fewer than 50 families.

‡ Standard deviation $= \sqrt{\dfrac{\sum\limits_{i=1}^{n} (x_i - \bar{x})^2}{n-1}}$

Where
n = number of census tracts
x_i = average family income in census tract i
$\bar{x}$ = mean of the average family income of census tracts

§ For definition, see text.

Sources:
Canada, Statistics Canada, *1971 Census of Canada: Population and Housing Characteristics by Census Tracts*, Census Tract Series B, Cat. No. 95-700 series (Ottawa: Information Canada, 1974);

Tables 4.1, 4.2, and 4.4.

a metropolitan area. Once population size is taken into account there is no relationship between the Gini coefficient of income disparity in a metropolitan area and the standard deviation of average family incomes of its census tracts. The causal structure of relationships among these characteristics is thus:
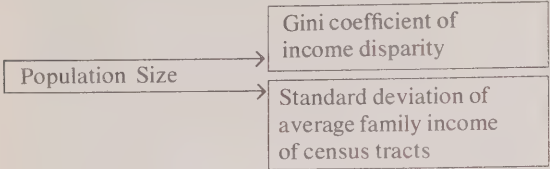
Arrows in this diagram indicate directions of influence. Note that no arrow links the two boxes on the right. The correlation between the two arises because both are determined in part by population.

4.4   The right and wrong side of the tracks

We have seen that metropolitan areas in Canada (with only minor exceptions) have both high-income areas and low-income neighbourhoods. This section examines the spatial patterns of these neighbourhoods in each metropolitan area. We discover whether high-income areas tend to be in a single sector of each city; and whether they are distributed around the fringes of metropolitan areas, near the city centre, or at different relative distances from the central area in different cities. We see whether low-income areas in Metropolitan Canada are in the inner city, in the rural-urban fringe, in a single sector, or in several sectors. Are high- and low-income areas commonly adjacent to each other, or are they usually separated by middle-income areas?

Figure 4.4 Income disparities, St. John's CMA, 1971

Average family income, 1970	
under $7,500	
over $15,000	

Population
11,600
7,700
2,800

Volume III contains a census tract map for each CMA showing the average family income of each tract in terms of income quartiles. The 2,258 census tracts were ranked according to average family income, and the ranked listing was divided into four segments (quartiles) with 564-565 tracts each. The boundaries between the income quartiles were $8,506, $9,852 and $11,752. For example, tracts in the third quartile had an average family income between $9,852 and $11,752. Maps were then drawn on the basis of this classification. The series of maps permits comparison among tracts in different cities, as well as among tracts in any particular metropolitan area.

A second series of maps was drawn in which attention is focused on areas of very low and very high incomes, i.e., tracts where the average family income was below $7,500 or in excess of $15,000. These two extremes in the income distribution account for 10.4 percent and 8.4 percent of the 2,258 census tracts, respectively. Although a family income of $7,500 may be higher than the poverty line for the average family in 1970, and although an income of $15,000 may not be high enough to identify a truly wealthy family, family incomes outside of the $7,500 to $15,000 range when averaged over a whole census tract are sure signs of a concentration of poor or wealthy families in this census tract, notwithstanding the important distinction between income and wealth and poverty. Figures 4.4 to 4.24 are, in essence, maps of wealth and poverty in each metropolitan area, although they are based solely on family income levels in 1970.

Metropolitan poverty in Canada is primarily an inner city problem. In most metropolitan areas, the only census tracts with an average family income of under

Figure 4.5 Income disparities, Halifax CMA, 1971

Scale

0   5   10
kilometres

Average family income, 1970		Population	
under $7,500	●	17,800	◯
over $15,000	●	6,500	◌
		3,500	○
		1,200	°

Figure 4.6 Income disparities, Saint John CMA, 1971

Average family income, 1970		Population	
under $7,500	🟠	6,900	◯
over $15,000	🟢	4,400	○
		2,400	∘
		700	·

Figure 4.7 Income disparities, Québec CMA, 1971

Average family income, 1970		Population	
under $7,500	🟠	14,900	◯
over $15,000	🟢	9,900	◯
		5,900	○
		3,600	○
		1,500	∘
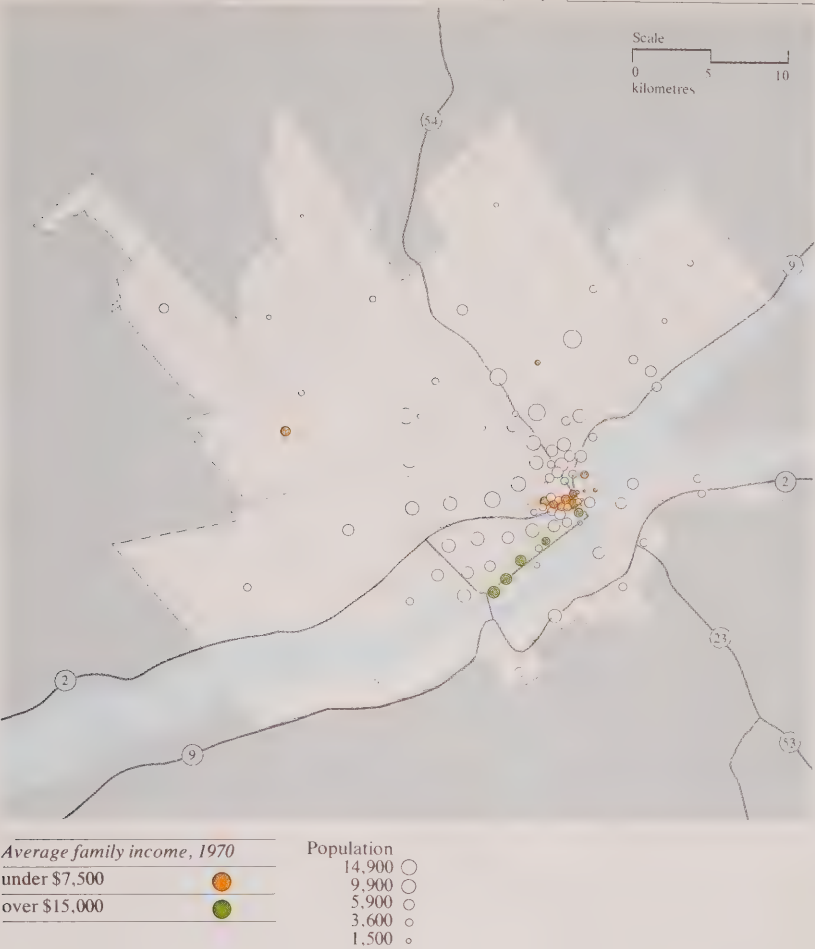
Figure 4.8 Income disparities, Montréal CMA, 1971

Scale

0   5   10   15
kilometres

Average family income, 1970

under $7,500

over $15,000

Population
20,700
9,900
6,800
5,300
4,000
2,500
1,200

Figure 4.9 Income disparities, Ottawa — Hull CMA, 1971
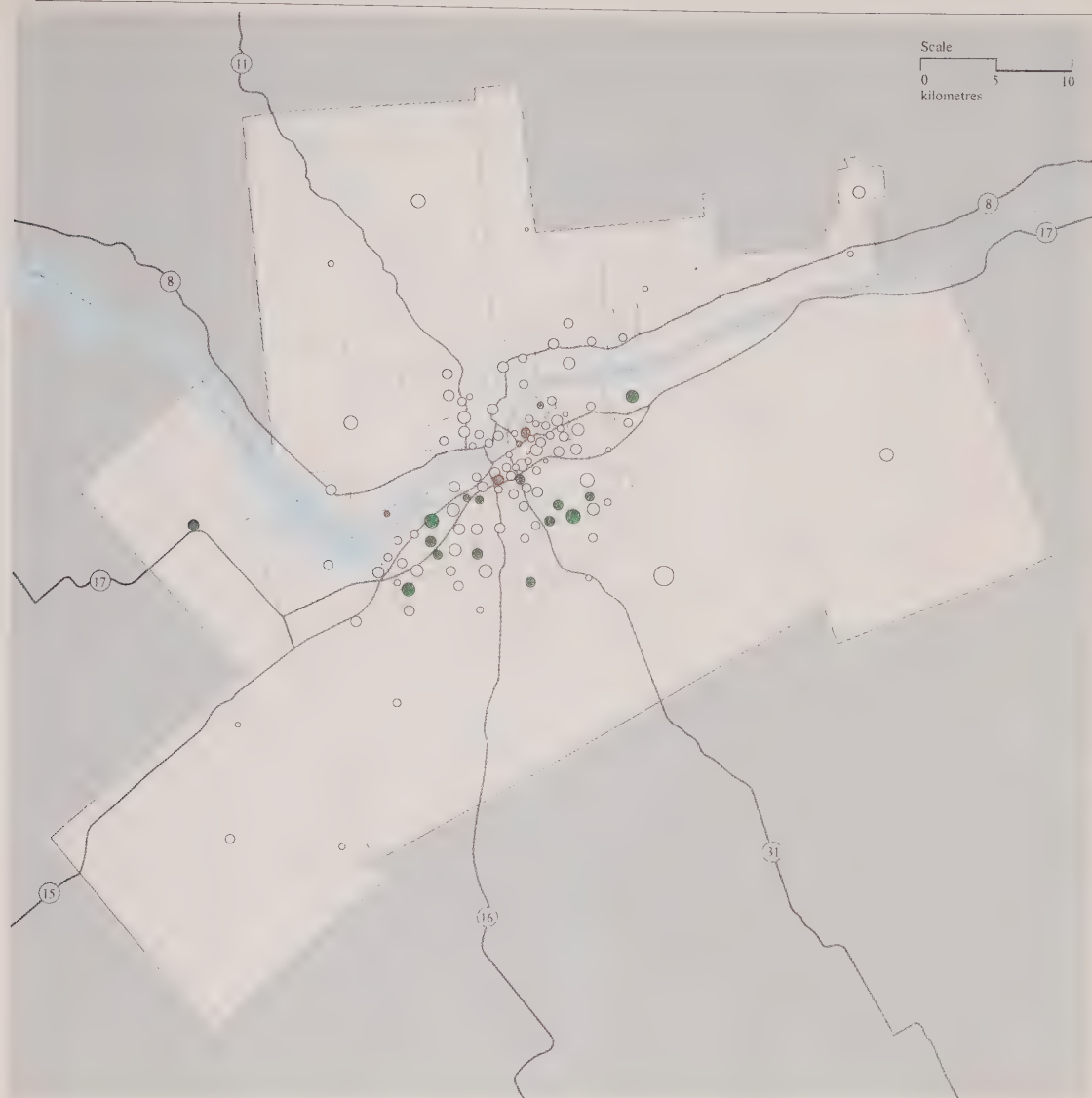
Average family income, 1970

| under $7,500 | 🔴 |
| over $15,000 | 🟢 |

Population
20,300
9,800
6,700
4,700
2,500

Figure 4.10 Income disparities, Toronto CMA, 1971

Average family income, 1970		Population	
under $7,500		20,500	○
over $15,000		16,200	○
		10,400	○
		7,800	○
		5,700	○
		4,000	○
		1,900	○

Figure 4.11 Income disparities. Hamilton CMA, 1971

Average family income, 1970		Population	
under $7,500	🟠	19,100	◯
over $15,000	🟢	16,800	◯
		7,500	○
		4,800	∘
		2,800	·

Figure 4.12 Income disparities, St. Catharines – Niagara CMA, 1971

Average family income, 1970		Population	
under $7,500	●	23,000	◯
over $15,000	●	16,900	◯
		7,200	○
		2,800	∘

$7,500 in 1970 were situated very close to the city centre. In a few instances, however, very low-income areas were also found towards the edge of the metropolitan area. The St. John's and Saint John CMAs were ringed with low-income rural areas, and Québec City and Montréal also had a number of low-income rural tracts on their fringe. Metropolitan areas which have a second subsidiary core area often had a secondary area with low income near the second core (e.g., in Welland in the St. Catharines-Niagara CMA and in New Westminster in the Vancouver CMA).

For the most part, however, areas of low income are concentrated near the urban core. In cities with several tracts with incomes below $7,500, these tracts are usually contiguous and either include or are adjacent to the census tract(s) in which the central business district is found. Several quite extensive low-income areas are found, including most of the inner areas of St. John's and Saint John. Three contiguous tracts also form a belt of low-income tracts in inner Halifax. The part of Québec City astride the St. Charles River lying below the escarpment was almost all below the $7,500 level.

Montréal has three great swaths of low family incomes radiating from downtown:

a) the low-income French area to the northeast along the river;

b) the immigrant area to the northwest along the St-Laurent Boulevard axis; and

c) the area along the Lachine Canal with a mixture of French and Irish Roman Catholics.

In Ottawa two low-income areas stand out: the French area of Lower Town and the Italian area along Preston Street. To the surprise of many, there were no census tracts in Hull where the average family income in 1970 fell below $7,500, although several were in the lowest quartile. On the Québec side of the Ottawa-Hull CMA, only the small village of Deschênes fell below $7,500.

Toronto's lowest-income census tracts were all south of Bloor Street both east and west of the downtown area. The western area contains tracts with a variety of ethnic minorities: Chinese, Portuguese, Italians and Negroes, among others. This area has long been Toronto's main reception area for poor immigrants. The area to the east of downtown, on the other hand, is the home of Toronto's poor Anglo-Saxons.

In Hamilton the heavy industrial waterfront area and the core of the city stand out as the areas of lowest average family income. In London, Windsor and

Figure 4.13 Income disparities, Kitchener CMA, 1971

Average family income, 1970		Population	
under $7,500	🔴	10,300	○
over $15,000	🟢	8,400	○
		5,300	○
		2,300	○

57
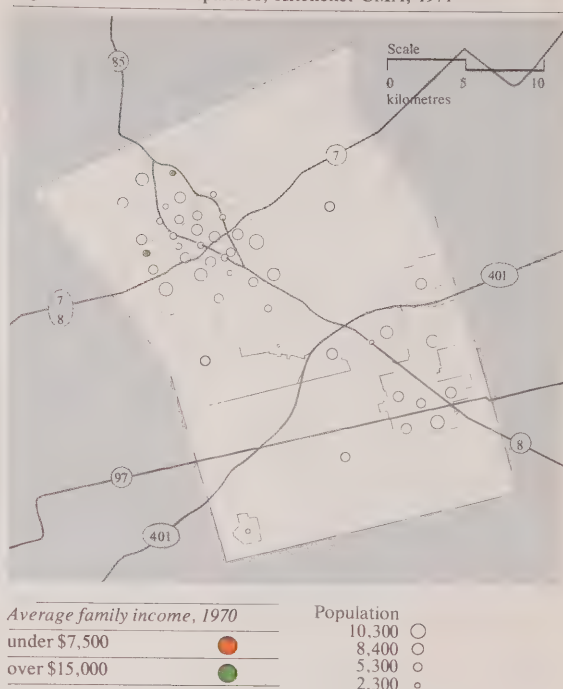
Figure 4.14 Income disparities, London CMA, 1971

Scale

0	5	10

kilometres

Average family income, 1970

under $7,500

over $15,000

Population

25,700

5,500

2,100

Thunder Bay only the census tract containing the central business district had an average family income under $7,500.

Winnipeg has a solid block of low-income tracts extending in all directions from Portage and Main but farther towards the north and west than in the other directions. Several East European ethnic minorities live in this area.

In Regina, Saskatoon, Edmonton, Calgary and Victoria all the lowest-income census tracts include the central business districts and/or the heavy industrial areas, often along the railway tracks. Vancouver's low-income families tend to live east of downtown throughout the heavy industrial waterfront areas along Burrard Inlet and False Creek.

Low-income families in Metropolitan Canada, then, usually live in highly specific areas. The central business district is almost always poor, and poor areas extend outwards from the core along railway tracks and waterfronts, areas which also include industrial uses which detract from the area as a place of residence. A sectoral pattern is the norm. Often low-income areas also have an ethnic minority—a relationship elaborated in Chapter 6. In most cities, areas with a concentration of low-income families are entirely within the older inner city, but pockets of rural poverty are occasionally found on the fringe of the CMA. These metropolitan areas may be overbounded, in the sense that the fringe areas do not participate fully in the metropolitan labour market.

Wealthy census tracts—defined as those in which the average family income in 1970 exceeded $15,000—are found in most metropolitan areas. Like poor census tracts, rich ones are usually contiguous.

Figure 4.15 Income disparities, Windsor CMA, 1971

Average family income, 1970		Population	
under $7,500	●	9,200	○
		7,500	○
over $15,000	●	4,600	○
		2,300	∘
		800	∘

Figure 4.16 Income disparities, Sudbury CMA, 1971

Scale

0   5   10
kilometres

Average family income, 1970		Population	
under $7,500	●	17,800	◯
over $15,000	●	7,200	○
		3,100	∘

Figure 4.17 Income disparities, Thunder Bay CMA, 1971

Average family income, 1970		Population	
under $7,500	🔴	7,400	◯
over $15,000	🟢	5,300	◯
		1,800	◦
		1,100	◦
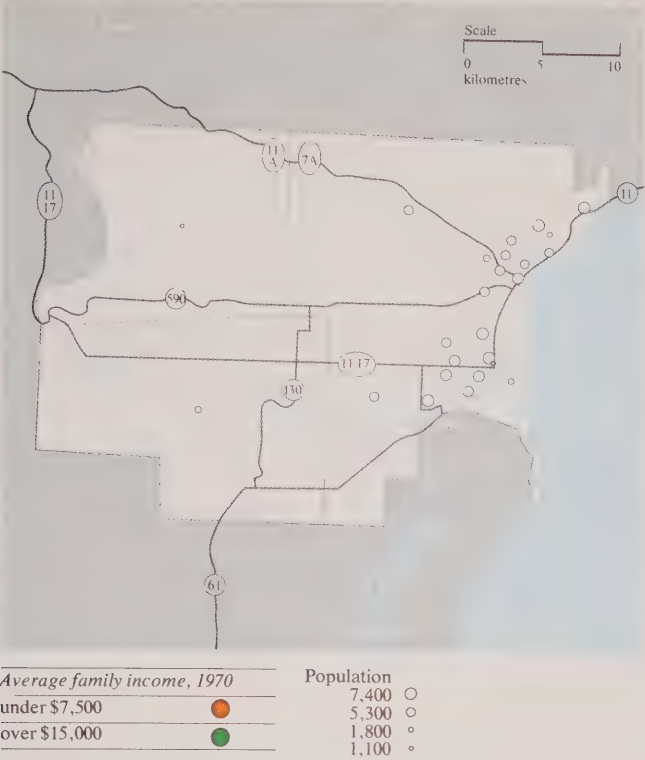
Occasionally high-income census tracts adjoin low-income ones, but more commonly middle-income census tracts separate the two.

The northern part of St. John's is clearly the domain of the high-income family. In Halifax, the southern part of the peninsula between Halifax Harbour and the North West Arm is the home of the upper crust. Saint John had only one census tract with an average family income over $15,000 (Rothesay town), but the other three tracts in the upper income quartile were also aligned along the southeast side of Kennebecasis Bay.

Québec City's high-income families live mainly above the escarpment in a belt extending from the wall to Henri IV Boulevard in Ste-Foy almost without interruption. In Montréal, the wedge of high-income census tracts also penetrates very close to the central business district and extends west to the end of Montréal Island.

There are high-income WASP areas (e.g., Westmount and the towns at the western end of the island), high-income Jewish areas (in Côte-St-Luc and Mount Royal) and high-income French areas (in Outremont). Although the western wedge of high-income census tracts is interrupted by moderate-income areas, the sectoral pattern of both rich and poor areas in Montréal is very clear.

Ottawa-Hull has high-income census tracts in several areas, though they are absent from the Québec side of the river. Rockcliffe Park had the highest average family income in Ottawa (almost $39,000 in 1970), but the western and southeastern sectors of the city had most of the high-income tracts.

Toronto's high-income census tracts are found mainly in three areas:

a) the northern sector including the old WASP

Figure 4.18 Income disparities, Winnipeg CMA, 1971

Scale

0   5   10
kilometres

Average family income, 1970		Population	
under $7,500	⬤	12,500	◯
over $15,000	⬤	10,100	◯
		6,900	◯
		3,900	◦
		1,200	◦
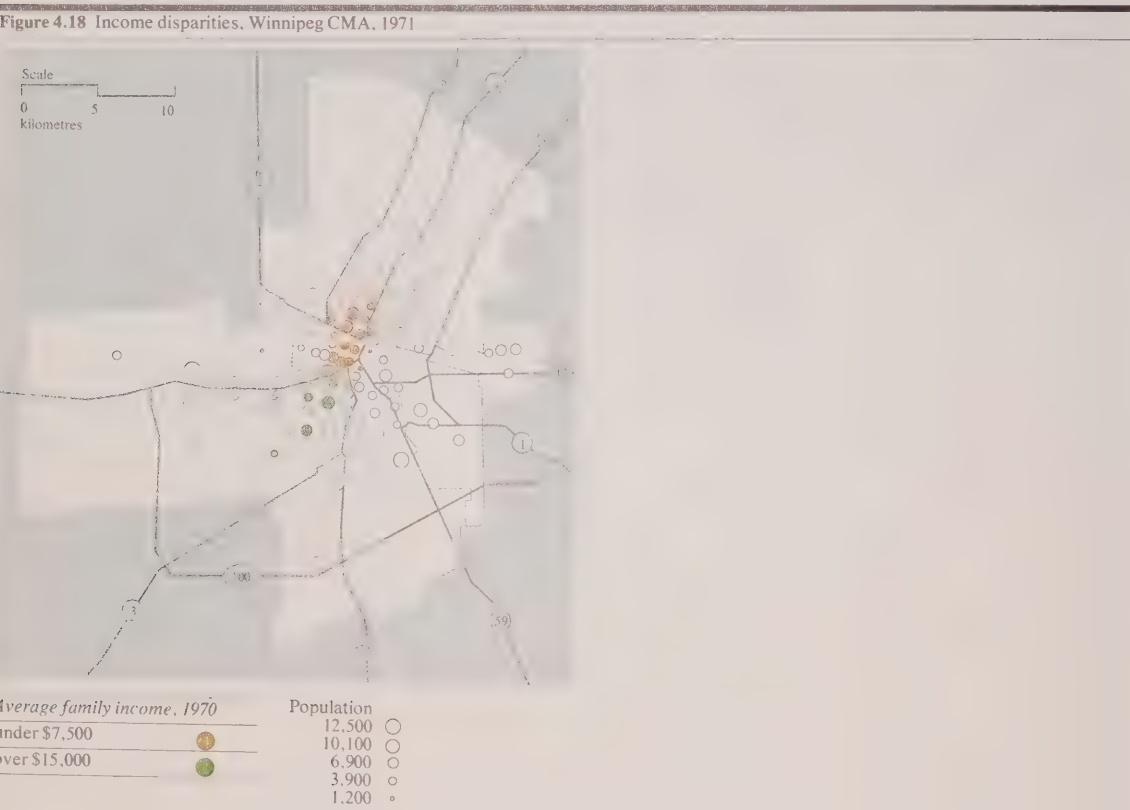
Rosedale area, Jewish Forest Hill and the mixed WASP-Jewish area centred on Bayview Avenue and extending into the town of Markham;

b) central Etobicoke, between Bloor Street and Highway 401; and

c) parts of Mississauga and Oakville, along Lake Ontario from Port Credit almost to the core of Oakville, with an extension north along the scenic Credit River.

Hamilton's few high-income tracts are in the western part of the city near McMaster University and in parts of Burlington, especially near the lake and the bay.

St. Catharines-Niagara and Kitchener have such an even income distribution and such low levels of income segregation that only two noncontiguous tracts in each of these CMAs had average family incomes over $15,000 in 1970. Most of London's upper-income tracts were in the northern sector. Little can be said on the basis of the distribution of very high-income tracts in Windsor and Sudbury.

The southwestern sectors of Winnipeg, Calgary and Edmonton have the highest incomes, while the only really high-income tract in Regina is in the southeast. Shaughnessey, the British Properties, West Vancouver, and the area surrounding the University of British Columbia house Vancouver's high-income families. The Oak Bay area in Victoria stands out for its wealth in that city.

From this very brief survey of high-income areas in Metropolitan Canada the following points may be made. In most cities, high-income areas are found in only one or two sectors radiating from the city centre. Although these areas seldom adjoin the central business

Figure 4.19 Income disparities, Regina CMA, 1971
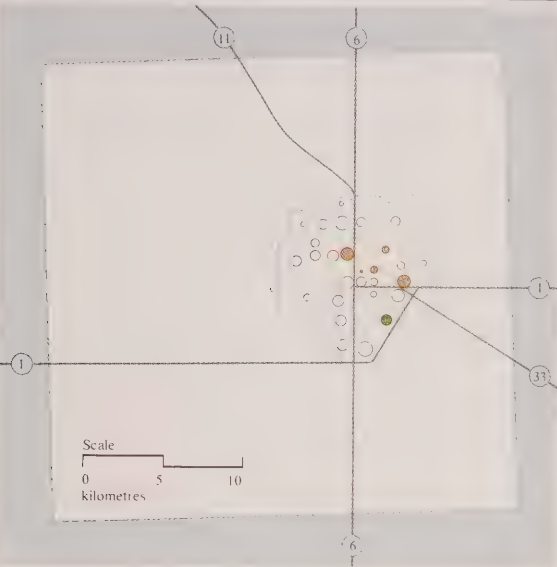
Average family income, 1970		Population	
under $7,500	🟠	10,000	◯
		7,500	◯
over $15,000	🟢	3,000	∘
		600	·

Figure 4.20 Income disparities, Saskatoon CMA, 1971
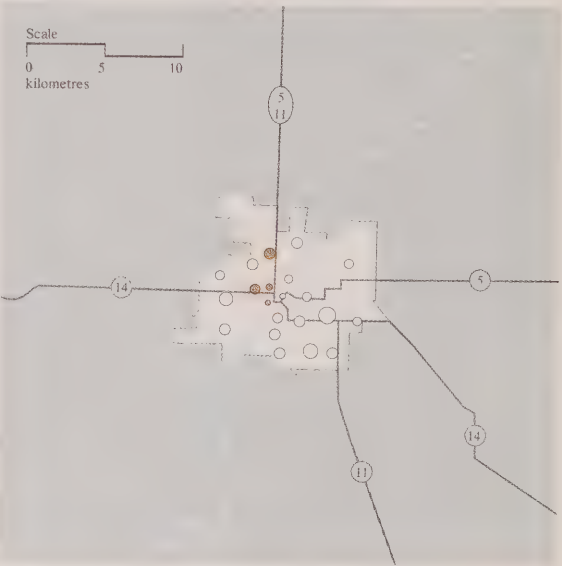
Average family income, 1970		Population	
under $7,500	🟠	13,000	◯
		8,000	◯
over $15,000	🟢	3,900	∘

Figure 4.21 Income disparities, Edmonton CMA, 1971

Average family income, 1970
under $7,500
over $15,000

Population
25,700
8,300
4,900
800
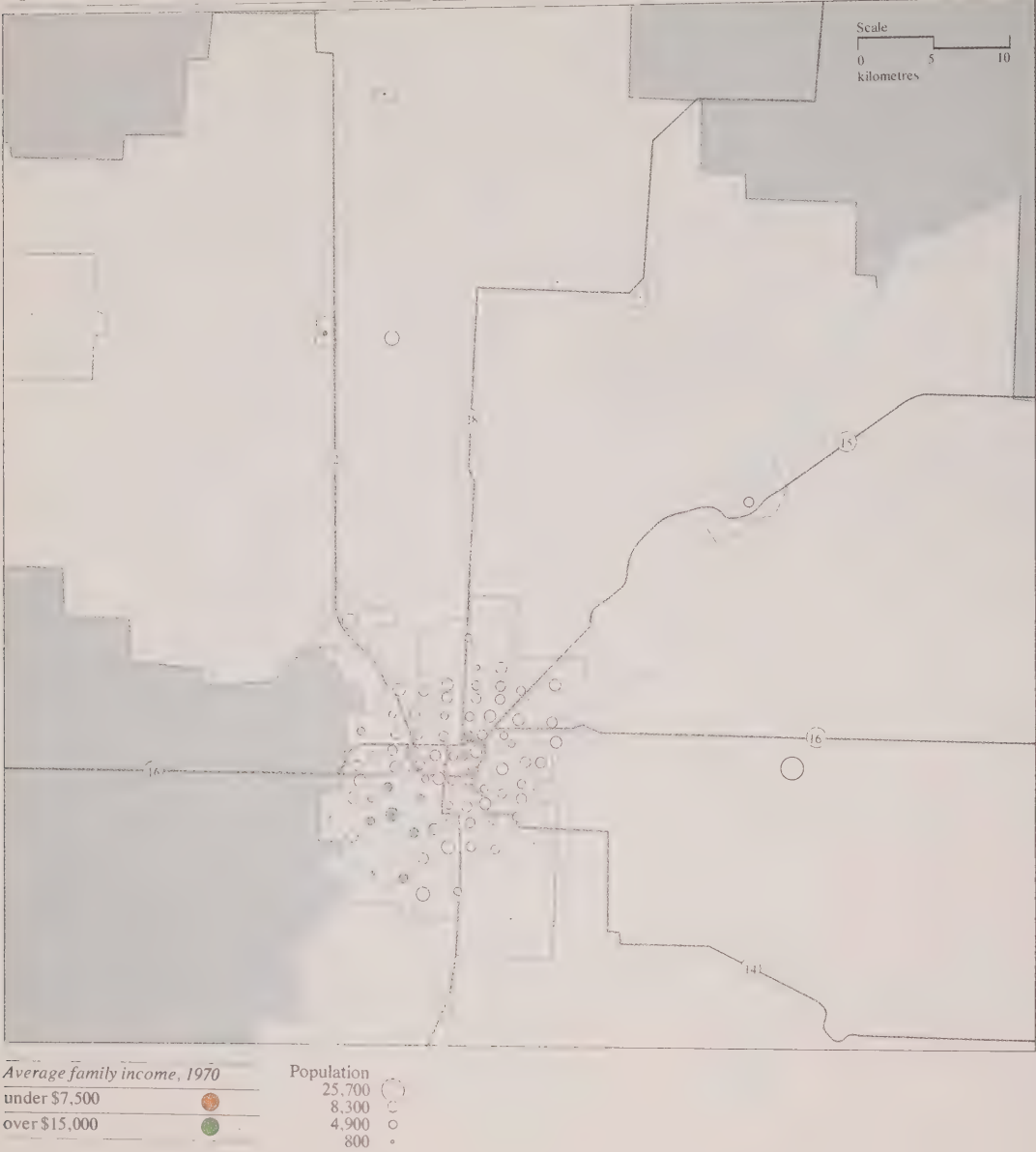
Figure 4.22 Income disparities, Calgary CMA, 1971

Scale

0   5   10
kilometres

Average family income, 1970		Population	
under $7,500	●	11,100	○
over $15,000	●	6,700	○
		5,200	○
		3,700	○
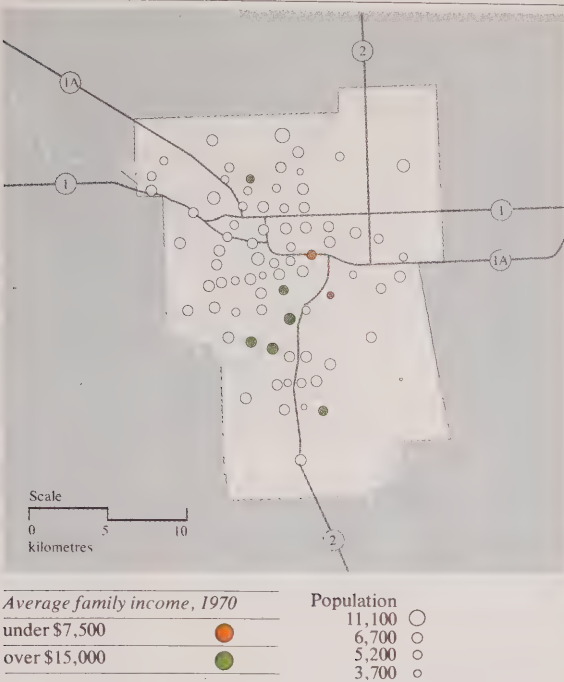
district, they are usually extensions of a deteriorated, historic, well-to-do area close to the city centre. On the other hand, high-income sectors rarely extend to the outer limits of the metropolitan area. Instead, incomes tend to fall off again near the CMA boundary. Thus metropolitan wealth is most commonly neither an inner city nor an urban fringe phenomenon. Admittedly, many wealthy families do live in the inner city and in outer exurbia, but upper-income areas tend to be in neither of these extremes.

Topographical peculiarities are strongly related to the location of upper-income neighbourhoods in most metropolitan areas. Oceanfronts, lakeshores and rivers, if not appropriated for industrial or transportation use, often attract those whose high incomes give them the greatest residential choice. Mountains and views act in the same way.

In large metropolitan areas, high income areas are themselves distinguished by ethnic origin and age structure—a topic elaborated in Chapter 6.

In order to understand the pattern of income distribution in a city, an immense amount of information is required: the timing of certain key development decisions; the actions of municipal, provincial and federal governments which have affected the social geography of the city; the institutional/legal framework; the relationships between income and the other dimensions of social differentiation; the local topography and efforts to modify it and overcome physical obstacles; the timing of metropolitan growth; the evolution of the transportation system; etc. A survey of the kind presented here can at best only describe certain features of the income distribution which are common to most metropolitan areas. Deviations from the norm must be the subject of much more intensive research on each metropolitan area.

Figure 4.23 Income disparities, Vancouver CMA, 1971

Scale

0   5   10
kilometres

Average family income, 1970	Population	
under $7,500	24,300	
	10,600	
over $15,000	6,600	
	4,400	
	2,200	

Figure 4.24 Income disparities, Victoria CMA, 1971

Scale

0   5   10
kilometres

Average family income, 1970		Population	
under $7,500	🔴	22,800	◯
over $15,000	🟢	6,000	○
		3,100	∘

Notes

[1] The exclusion of farm households and certain other households from the 1961 data probably raised the nonmetropolitan income level in 1961. It is likely, therefore, that the metropolitan-nonmetropolitan income gap narrowed (in percentage terms though not in current dollars) between 1961 and 1971. The exclusion of farm households, however, should have had relatively little effect on the data for metropolitan areas, at least when used for comparison among themselves.

[2] In Figure 4.3 and throughout this chapter, nine populated census tracts which had no families in 1971 were excluded from consideration. We are left, then, with 2,258 census tracts.

[3] If the two income categories below $4,000 had been considered together as a single group, its segregation index may have been as high as the index for the $15,000 category.

[4] The correlation coefficient between the two measures is .79.

[5] Tract no. 13 in Sudbury is an example of a very small census tract where the published figure for average family income ($22,226) is undoubtedly erroneous. In order to calculate average family income, Statistics Canada divides total family income by the number of families. But the number of families is itself randomly rounded to end in 0 or 5 before the division is made. Tract no. 13 had only 10 families (rounded), but the actual number may have been as high as 14. An error of this size in the divisor makes the estimate of average family income completely unreliable, especially when one considers that only the one-third sample of households was asked for income data anyway. Tract no. 13 increased the standard deviation of the average family income of census tracts in the Sudbury CMA to $2,594 compared to $1,683 when this tract is excluded. It also increased the average to $12,152, compared to $11,779 when tract no. 13 is excluded.

[6] The Gini coefficient measures the extent to which family incomes are evenly distributed across a number of income groups. Four family-income groups were used in its calculation (under $5,000, $5,000-9,999, $10,000-14,999, and $15,000). The higher the Gini coefficient of a metropolitan area, the greater the amount of income disparity among families in the area. For a more complete discussion, see Chapter 4 of Volume I in this series.

[7] The correlation coefficient between the two measures is .54.

5 The cultural mosaic of Metropolitan Canada

5.1   Introduction

Each evening, tables in Canadian homes are laden with goulash and knishes, almond guy ding and lasagna, schnitzels and sauerkraut, popadoms, pea soup and Yorkshire pudding. But the tables displaying these traditional dishes are not spread evenly across the country. Oktoberfest is not celebrated in St. John's, nor Yom Kippur in Chicoutimi. Furthermore, even within a metropolitan area as ethnically diverse as Toronto, the dinner-time aromas filtering into apartment hallways in Flemingdon Park are not the same as those in Downsview or Rosedale. Neighbourhoods in Metropolitan Canada differ enormously in their cultural and ethnic characteristics. It is this third dimension of social differentiation which is the concern of this chapter, setting the stage for an examination of the interrelationships among the three fundamental divisions of Canadian society, as expressed in urban neighbourhoods, in the following chapter.

We first investigate metropolitan differences in the cultural characteristics of their population, since it is the overall cultural profile of a city's population which determines its potential for neighbourhood differentiation along cultural lines. We develop a measure of assimilation of ethnic groups based on language retention, and use this measure to explain differences among metropolitan areas and among ethnic groups in their levels of ethnic segregation. The distribution of ethnic neighbourhoods within each city is discussed in section 5.5, and in section 5.6 an index of ethnic diversity is introduced as a single summary measure of the ethnic character of a neighbourhood.

5.2   Metropolitan differences in cultural characteristics

The Canadian census provides a wide range of measures of the cultural characteristics of the population. Data on birthplace, parental birthplace, mother tongue, language most often spoken at home, official language, ethnic origin and religious denomination all measure different stages of integration into Canadian society, especially when persons are cross-classified according to two or more of these characteristics. Does a higher percentage of the German-born, for example, usually speak English at home than the Polish-born? Are Italian immigrants in Toronto more integrated into Canadian society than Italian immigrants in Montréal? Are those of Polish descent in Edmonton more highly segregated than their counterparts in Sudbury?

Although the potential for cross-classification to answer questions such as these exists in the census data, the amount of data required would quickly become indigestible, even at the metropolitan area level. For the most part, therefore, each type of cultural data for each metropolitan area is presented individually in this volume, rather than cross-classified by each other type. At the census tract level, cross-classification is clearly impractical, especially for over 2,200 census tracts.

We begin with the data on the immigrant population shown in Table 5.1. One-fifth of the 1971 population of Metropolitan Canada was foreign-born, but the percentage varied from 1.4 percent in Chicoutimi-Jonquière to 34 percent in the Toronto CMA. Even the relatively high rate of immigration during the sixties, however, could not prevent the foreign-born percentage from declining slightly between 1961 and 1971. Many of the numerous immigrants who arrived just before and after World War I died during the 1960s and their numbers were not completely replaced by immigrants arriving during that decade. Between 1961 and 1971 most metropolitan areas, but especially those in Western Canada, experienced declines in the percentage of their population which was foreign-born.

By 1971, three-quarters of the foreign-born population in Metropolitan Canada had arrived since World War II, but the timing of immigrant arrivals has

also varied markedly among cities — a fact which has implications for city differences in the stage of integration of the immigrant population.

Regional contrasts in birthplace are apparent in Table 5.2. Persons born in the British Isles are most common in the metropolitan areas of Southern Ontario and British Columbia, reaching almost 15 percent in utterly English Victoria. Many Torontonians would be surprised to see that Toronto ranks second in this respect, and has more persons who were born in the British Isles than in any other country usually associated with Toronto's immigrant population, including Italy.

Those born in Northern Europe (Scandinavia and Finland) are a relatively minor group in Metropolitan Canada as a whole, but are significant minorities in Thunder Bay, Sudbury and Vancouver. West Euro-

peans are most numerous in Ontario and the West. Southern Europeans live mainly in Ontario's metropolitan areas, while the East Europeans favour the cities of Ontario and the Prairies. The American-born, the only major group more common in nonmetropolitan than in metropolitan areas in Canada, are most often encountered in the cities of the West, as well as in Windsor and St. Catharines-Niagara, the two Ontario metropolitan areas on the American border. The Asian-born constitute a larger percentage of the population of Vancouver, Victoria and Toronto than elsewhere. Those born in ''other'' places (South and Central America, Africa and Australasia) reach one percent of the population only in Toronto, Vancouver, Montréal and Kitchener.

Table 5.2 also includes information on interprovincial lifetime migration. Metropolitan areas in

Table 5.1 Immigrant population, Census Metropolitan Areas, 1961 and 1971*

Census Metropolitan Area	Immigrants by period of arrival in Canada, as a percentage of CMA population								
	1971					1961			
	Before 1946	1946-1960	1961-1971†	Total	Number ('000)	Before 1946	1946-1961‡	Total	Number ('000)
Calgary	5.8	8.1	6.6	20.5	82.6	11.1	13.7	24.7	69.0
Chicoutimi-Jonquière	0.3	0.4	0.6	1.4	1.8	0.6	0.8	1.4	1.8
Edmonton	5.7	7.6	5.0	18.3	90.9	10.3	12.8	23.0	82.9
Halifax	1.8	2.6	2.8	7.2	16.1	2.9	3.9	6.8	13.2
Hamilton	6.6	12.2	7.9	26.7	132.9	11.4	16.6	28.0	112.2
Kitchener	4.0	9.0	8.8	21.8	49.4	7.1	13.3	20.4	31.6
London	4.8	8.6	6.5	20.0	57.3	8.3	11.9	20.2	45.8
Montréal	2.7	6.0	6.0	14.8	405.7	4.9	9.8	14.7	326.2
Ottawa-Hull	2.4	5.4	4.7	12.5	75.3	4.1	7.7	11.8	53.8
Québec	0.4	0.7	1.1	2.2	10.8	0.8	1.3	2.1	7.9
Regina	6.5	4.1	2.6	13.1	18.4	10.5	6.9	17.3	19.7
St. Catharines-Niagara	7.4	10.4	5.2	22.9	69.6	11.8	13.8	25.6	66.0
St. John's	0.5	1.0	1.5	3.0	3.9	0.8	1.5	2.3	2.4
Saint John	2.1	1.4	1.4	4.9	5.2	3.2	2.4	5.6	5.5
Saskatoon	7.1	3.5	3.3	13.9	17.6	12.0	6.0	18.0	17.2
Sudbury	3.1	6.0	3.3	12.4	19.3	5.6	9.9	15.5	19.7
Thunder Bay	8.5	8.9	3.7	21.1	23.6	13.3	12.3	25.6	26.1
Toronto	5.8	14.3	13.9	34.0	893.3	10.9	21.8	32.7	627.7
Vancouver	8.9	9.4	8.1	26.5	286.5	16.2	12.4	28.6	236.2
Victoria	12.0	8.2	4.5	24.7	48.4	19.3	9.7	29.1	45.3
Windsor	7.1	7.8	6.6	21.5	55.6	11.6	10.4	22.0	47.9
Winnipeg	7.9	6.8	5.1	19.9	107.4	13.3	10.4	23.7	113.1
Metropolitan Canada	**5.0**	**8.4**	**7.4**	**20.8**	**2,471.7**	**8.8**	**12.4**	**21.2**	**1,971.2**
Nonmetropolitan Canada	**3.7**	**3.0**	**1.8**	**8.5**	**823.9**	**5.8**	**4.0**	**9.8**	**873.1**
Canada	**4.4**	**6.0**	**4.9**	**15.3**	**3,295.5**	**7.3**	**8.3**	**15.6**	**2,844.3**

British Columbia and Alberta, as well as the national capital, derive a larger percentage of their population from other provinces than do the other metropolitan areas.

Language forms the basis of Tables 5.3 and 5.4. Mother tongue, the language first learned as a child and still understood, is used in Table 5.3 and the language most often spoken at home in Table 5.4. All mother tongues reported by at least one percent of the population of Metropolitan Canada, and all languages spoken at home by at least 50,000 Canadian residents in 1971, are shown separately. By comparing the corresponding entries in each table it is possible to measure the degree of language retention or assimilation in each city. It is evident, for example, that in every CMA outside the province of Québec, French is much more often reported as a mother tongue than as the language usually spoken at home. The loss of French in cities such as Saint John, Windsor and Winnipeg is quite apparent. English, on the other hand, becomes the spoken language of the other mother-tongue groups. The percentage speaking German and Ukrainian in Metropolitan Canada is less than half the percentage reporting these languages as mother tongue. The Italian-speaking have retained their language more than the Germans and Ukrainians, at least partly because of their more recent arrival in Canada.

The major metropolitan differences noted in connection with the birthplace data apply to the language data as well. Not apparent in the aggregated birthplace data, however, are the large numbers of Germans in Kitchener, the many Greeks in Toronto and Montréal, and the distribution of the various East European language groups.

Table 5.2 Birthplace of the population, Census Metropolitan Areas, 1971

Census Metropolitan Area	Birthplace (%)									
	Same province	Different province	United Kingdom & Ireland	Northern Europe*	Western Europe†	Southern Europe‡	Eastern Europe§	United States	Asia	Other
Calgary	50.2	29.3	6.4	0.7	3.7	1.9	2.7	3.0	1.1	0.9
Chicoutimi-Jonquière	96.1	2.6	0.2	0.0	0.5	0.1	0.1	0.2	0.1	0.1
Edmonton	60.7	20.9	4.6	0.6	4.0	1.7	3.7	1.9	1.1	0.7
Halifax	74.0	18.8	3.1	0.2	0.8	0.6	0.4	1.2	0.7	0.4
Hamilton	64.2	9.1	9.9	0.2	3.5	6.5	3.9	1.1	0.7	0.8
Kitchener	68.7	9.5	5.9	0.2	4.7	4.1	3.9	1.2	0.7	1.1
London	71.4	8.6	8.2	0.2	3.6	2.9	2.1	1.5	0.7	0.7
Montréal	79.5	5.7	2.2	0.1	2.1	4.9	2.2	1.0	0.8	1.6
Ottawa-Hull	65.2	22.3	4.3	0.2	2.1	1.9	1.0	1.2	1.0	0.9
Québec	95.7	2.0	0.2	0.0	1.0	0.2	0.1	0.5	0.1	0.2
Regina	74.0	12.9	3.8	0.2	2.3	0.9	2.8	1.8	0.8	0.4
St. Catharines-Niagara	67.0	10.0	6.7	0.3	2.8	5.5	4.5	2.3	0.4	0.5
St. John's	93.2	3.8	1.4	0.0	0.3	0.1	0.1	0.7	0.3	0.1
Saint John	82.8	12.4	2.2	0.1	0.5	0.2	0.3	1.1	0.2	0.2
Saskatoon	71.9	14.2	4.4	0.4	1.9	0.7	2.9	2.4	0.8	0.5
Sudbury	74.1	13.5	2.3	1.5	1.5	3.7	1.9	0.6	0.5	0.5
Thunder Bay	66.4	12.6	4.3	3.6	2.4	5.0	4.1	1.1	0.3	0.3
Toronto	55.8	10.2	10.1	0.5	3.1	10.3	4.3	1.4	1.8	2.7
Vancouver	46.1	27.5	10.0	1.4	3.5	2.4	2.2	2.4	2.8	1.7
Victoria	45.6	29.7	14.7	0.8	2.5	0.9	1.0	2.4	1.6	0.9
Windsor	71.2	7.3	5.5	0.2	1.7	7.0	3.5	2.3	0.8	0.5
Winnipeg	65.6	14.5	5.7	0.4	3.1	2.0	5.7	1.3	0.7	0.9
Metropolitan Canada	**66.5**	**12.6**	**6.1**	**0.4**	**2.7**	**4.8**	**2.8**	**1.4**	**1.2**	**1.4**
Nonmetropolitan Canada	**81.5**	**10.0**	**2.6**	**0.3**	**1.7**	**0.7**	**1.2**	**1.5**	**0.3**	**0.3**
Canada	**73.3**	**11.5**	**4.5**	**0.4**	**2.2**	**2.9**	**2.1**	**1.4**	**0.8**	**0.9**

* Denmark, Finland, Iceland, Norway and Sweden.

† Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Netherlands and Switzerland.

‡ Albania, Andorra, Balearic Islands, Greece, Italy, Malta, Monaco, Portugal, Spain and Yugoslavia.

§ Bulgaria, Czechoslovakia, Hungary, Poland, Rumania and U.S.S.R

Table 5.3 Mother tongue of the population, Census Metropolitan Areas, 1971

Census Metropolitan Area	Mother tongue (%)					
	English	French*	German	Italian	Ukrainian†	Other
Calgary	84.0	1.3	4.4	1.6	1.4	7.2
Chicoutimi-Jonquière	3.5	96.0	0.1	0.1	0.0	0.2
Edmonton	76.1	3.7	5.3	1.4	6.3	7.3
Halifax	94.3	3.0	0.4	0.4	0.1	1.9
Hamilton	79.5	1.9	2.3	5.7	1.5	9.1
Kitchener	80.6	1.8	8.6	0.8	0.6	7.6
London	87.8	1.1	1.9	1.6	0.5	7.1
Montréal	21.7	66.3	0.9	4.8	0.4	5.9
Ottawa-Hull	56.5	36.6	1.1	1.8	0.3	3.7
Québec	3.8	95.4	0.1	0.2	0.0	0.5
Regina	81.6	1.6	7.9	0.5	2.8	5.6
St. Catharines-Niagara	76.4	5.5	3.4	6.1	1.8	6.8
St. John's	98.9	0.3	0.2	0.1	0.0	0.6
Saint John	91.7	7.0	0.3	0.1	0.0	0.9
Saskatoon	79.2	2.2	6.5	0.3	6.3	5.5
Sudbury	54.4	31.9	1.2	4.1	1.8	6.7
Thunder Bay	73.8	2.1	1.5	5.1	4.6	12.8
Toronto	73.8	1.7	2.6	8.4	1.3	12.1
Vancouver	81.5	1.7	4.0	1.8	1.0	10.1
Victoria	90.5	1.2	1.7	0.4	0.4	5.8
Windsor	73.9	8.9	2.2	5.7	1.3	7.9
Winnipeg	70.8	5.7	6.5	1.2	7.0	8.8
Metropolitan Canada	**60.1**	**24.2**	**2.6**	**4.1**	**1.5**	**7.6**
Nonmetropolitan Canada	**60.3**	**30.1**	**2.7**	**0.5**	**1.4**	**5.0**
Canada	**60.2**	**26.9**	**2.6**	**2.5**	**1.4**	**6.5**

* Includes Walloon.

† Includes Ruthenian, Galician and Bukovinian.

Source:
Canada, Statistics Canada, *1971 Census of Canada: Population: Mother Tongue*, Bulletin 1.3-4, Cat. No. 92-725 (Ottawa: Information Canada, 1973).

Table 5.5 presents data on the ethnic origin of the population. A person's ethnic origin is the language or cultural group to which he or his ancestor on the male side belonged on coming to this continent. Although ethnic origin data are subject to greater error than the other types of cultural data, they do have the advantage of tracing deeper cultural roots than data on birthplace or spoken language.

Table 5.5 includes all ethnic groups accounting for at least one percent of Metropolitan Canada's population in 1971. Information is included for 1961 and 1971 on the basis of 1971 CMA boundaries. Because a language criterion has been used since 1951 to define ethnic origin, the Jewish ethnic group was seriously under-estimated in 1951 and 1961. Beginning in 1971, Statistics Canada adopted an editing procedure whereby all persons who reported Jewish religion were assigned to the Jewish ethnic group regardless of reported ethnic origin. The 1961 data in Table 5.5 have been adjusted to comply with the procedure used in 1971. Not only the Jewish, but also the Polish and Russian groups, are seriously affected by this adjustment. The 1961 data in this table are therefore preferable to the published 1961 census data.

Between 1961 and 1971, Metropolitan Canada became less British and less French in ethnic origin. The percentage of Jewish, Dutch, Polish and Scandinavian ethnic origin also declined. The largest increases occurred among the Italians and Asians. The apparent increase in the German percentage is largely attributable to the frequent change from Dutch or Austrian origin in 1961 to the German category in 1971 – a change which also accounts for part of the decline in the Dutch percentage. Small changes in the ethnic origin data for particular metropolitan areas should be viewed very cautiously, since ethnic origin data are somewhat unreliable.

The final cultural measure discussed here is the religious denomination of the population. To a certain extent religion is linked to ethnic origin, although many ethnic groups share a wide variety of religious beliefs. There is evidence that in the American melting pot religious distinctions remain important long after ethnic distinctions have virtually disappeared. Certainly Canadian cities differ in their religious composition, and religious differences among neighbourhoods within most Canadian metropolitan areas persist. As Porter showed, religion is an important criterion in Canada's vertical mosaic, even though we have no Belfast or Beirut.[1] In this volume, however, analysis of religious differentiation of neighbourhoods plays a role secondary to the study of ethnic differences.

Table 5.6 presents the major religious groups in each metropolitan area in 1961 and 1971 on the basis of 1971 boundaries. Several trends are apparent in Metropolitan Canada as a whole, and in particular cities. The declines in the major Protestant groups and the Jewish faith contrast with the increasing percentage reporting Roman Catholic, Greek Orthodox and Pentecostal denominations. The "other" category showed the greatest increase of all, largely because it includes those with no religion.

5.3   Ethnic group assimilation

Of all the measures of ethnic assimilation into a host society, the rate of language retention is one of the best. The willingness and ability of an immigrant group to learn English or French as a second language, and eventually to speak English or French most commonly at home, is a very good indicator of the probability of its assimilation into Canadian society in other respects as well, e.g., intermarriage, religion, the occupation structure, the political system and the Canadian elite.

Table 5.7 provides an indication of the extent of assimilation of the largest cultural minority groups in Canada. All ethnic groups in Metropolitan Canada are being assimilated into English-speaking society. A low percentage of the Scandinavian, Dutch, German, Jewish, Polish and Ukrainian ethnic groups still speak their ancestral language at home. Of the groups shown, the Greeks are by far the least assimilated (in terms of language), but the Italians, Orientals and Hungarians also show a moderately high rate of language retention. Length of residence in Canada is, of course, strongly related to levels of assimilation.

Table 5.4 Language most often spoken at home, Census Metropolitan Areas, 1971

| Census Metropolitan Area | Language most often spoken at home (%) | | | | | | | | | |
	English	French	Chinese or Japanese	German	Greek	Italian	Magyar (Hungarian)	Polish	Ukrainian	Other
Calgary	93.8	0.4	0.7	1.3	0.2	1.1	0.5	0.2	0.4	1.4
Chicoutimi-Jonquière	3.6	96.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Edmonton	90.7	1.6	0.8	1.7	0.1	1.0	0.2	0.4	2.1	1.5
Halifax	97.4	1.2	0.2	0.1	0.3	0.2	0.0	0.0	0.0	0.6
Hamilton	87.7	0.8	0.2	1.1	0.3	4.5	0.6	1.0	0.9	2.8
Kitchener	88.8	0.8	0.2	4.4	0.4	0.6	0.3	0.6	0.3	3.7
London	93.9	0.3	0.2	0.8	0.5	1.1	0.3	0.5	0.3	2.2
Montréal	24.9	66.3	0.3	0.4	1.2	3.9	0.3	0.3	0.3	2.0
Ottawa-Hull	62.2	33.8	0.3	0.4	0.1	1.4	0.1	0.2	0.1	1.3
Québec	3.5	96.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.2
Regina	95.1	0.4	0.6	1.6	0.2	0.3	0.3	0.2	0.7	0.6
St. Catharines-Niagara	86.2	3.5	0.1	1.6	0.1	4.4	0.7	0.9	1.0	1.5
St. John's	99.5	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Saint John	96.1	3.3	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.2
Saskatoon	93.3	0.7	0.5	1.4	0.1	0.2	0.2	0.2	2.6	0.9
Sudbury	66.0	26.4	0.2	0.4	0.2	2.9	0.1	0.5	0.8	2.5
Thunder Bay	87.1	0.7	0.2	0.5	0.2	3.9	0.1	1.1	1.7	4.5
Toronto	81.8	0.8	0.8	1.2	1.4	7.2	0.5	0.7	0.9	4.7
Vancouver	91.5	0.6	2.5	1.3	0.2	1.1	0.3	0.1	0.3	2.2
Victoria	96.3	0.3	1.0	0.5	0.0	0.2	0.1	0.1	0.1	1.4
Windsor	85.5	3.9	0.3	0.9	0.4	4.5	0.7	0.6	0.7	2.5
Winnipeg	86.5	3.3	0.3	2.4	0.2	1.0	0.3	0.9	2.9	2.3
Metropolitan Canada	67.3	23.1	0.6	1.0	0.7	3.3	0.3	0.5	0.7	2.5
Nonmetropolitan Canada	66.6	28.9	0.1	1.0	0.0	0.3	0.1	0.2	0.7	2.1
Canada	67.0	25.7	0.4	1.0	0.4	2.0	0.2	0.3	0.7	2.3

Source:
Canada, Statistics Canada, *1971 Census of Canada: Population: Official Language and Language Most Often Spoken at Home*, Bulletin 1. 3-5, Cat. No. 92-726 (Ottawa: Information Canada, 1973).

Census Metropolitan Area	Year	British	French	German	Italian	Jewish	Netherlands	Polish	Scandinavian	Ukrainian	Asian	Other	Index of ethnic diversity†
							Ethnic origin (%)						
Calgary	1971	56.0	4.1	12.6	2.4	0.9	3.4	1.9	5.0	3.9	2.0	7.8	.657
	1961	57.5	4.0	11.4	1.8	1.1	4.0	2.0	5.7	2.9	1.2	8.5	.642
Chicoutimi-Jonquière	1971	4.3	93.9	0.4	0.2	0.0	0.1	0.1	0.2	0.1	0.1	0.6	.116
	1961	3.8	94.6	0.3	0.2	0.0	0.1	0.2	0.2	0.1	0.1	0.6	.104
Edmonton	1971	44.7	7.2	12.6	1.8	0.6	3.4	3.4	4.7	12.6	2.0	7.0	.754
	1961	45.4	7.3	12.5	1.3	0.7	4.1	3.7	5.2	11.0	0.9	7.9	.749
Halifax	1971	77.7	8.5	4.9	0.6	0.7	1.9	0.4	0.7	0.3	1.2	3.1	.384
	1961	73.2	9.8	5.2	0.5	0.6	3.7	0.3	1.2	0.2	0.6	4.7	.448
Hamilton	1971	61.6	4.1	5.4	8.1	0.9	3.5	3.0	0.7	2.9	1.1	8.6	.599
	1961	62.1	3.9	5.4	6.4	1.0	3.9	3.5	0.9	2.9	0.6	9.5	.593
Kitchener	1971	51.5	4.3	26.6	1.3	0.6	2.0	2.8	0.5	1.4	1.1	8.0	.655
	1961	43.3	3.9	35.2	1.1	0.5	2.1	3.3	0.7	1.4	0.4	8.2	.679
London	1971	72.6	3.4	5.7	2.4	0.6	4.0	1.7	0.8	1.2	1.2	6.3	.461
	1961	73.7	3.1	5.5	1.7	0.6	4.3	1.7	1.1	1.0	0.4	7.1	.446
Montréal	1971	16.0	64.3	1.4	5.9	4.2	0.3	0.7	0.2	0.7	1.3	5.0	.554
	1961	17.5	65.1	1.2	4.6	4.7	0.3	0.9	0.3	0.7	0.5	4.1	.539
Ottawa-Hull	1971	44.9	39.6	3.2	2.5	1.2	1.2	0.9	0.6	0.9	1.5	3.4	.638
	1961	43.6	41.6	2.8	2.0	1.3	1.3	0.9	0.8	0.7	0.8	4.3	.633
Québec	1971	4.4	93.3	0.5	0.4	0.1	0.1	0.1	0.1	0.0	0.2	0.9	.127
	1961	4.2	94.0	0.3	0.3	0.1	0.1	0.1	0.1	0.0	0.1	0.7	.115
Regina	1971	46.5	4.4	21.8	0.7	0.6	1.5	2.7	3.8	6.2	1.5	10.3	.719
	1961	46.9	4.2	19.9	0.6	0.7	1.9	2.7	4.0	5.1	0.8	13.1	.719
St. Catharines-Niagara	1971	53.9	8.7	9.0	9.8	0.4	3.0	2.9	0.6	3.8	0.6	7.2	.676
	1961	51.9	7.9	9.1	8.4	0.4	3.9	3.2	0.8	3.6	0.5	10.5	.696
St. John's	1971	95.8	1.1	0.5	0.1	0.2	0.2	0.1	0.4	0.0	0.5	1.0	.082
	1961	95.6	1.4	0.6	0.1	0.1	0.1	0.1	0.5	0.0	0.2	1.3	.085
Saint John	1971	80.3	12.6	1.5	0.4	0.3	1.1	0.1	0.8	0.2	0.7	2.0	.339
	1961	77.9	12.9	1.4	0.3	0.5	1.7	0.1	1.1	0.1	0.5	3.4	.375
Saskatoon	1971	46.0	5.1	17.4	0.6	0.5	2.8	2.6	5.7	11.4	1.3	6.8	.735
	1961	48.6	4.2	14.7	0.4	0.9	4.4	2.7	5.5	9.5	0.7	8.3	.721
Sudbury	1971	36.7	37.4	3.2	6.7	0.2	0.8	1.9	0.8	3.6	0.8	8.0	.713
	1961	33.4	37.2	3.7	6.6	0.2	0.9	2.4	1.2	4.2	0.4	9.7	.732
Thunder Bay	1971	44.0	6.3	4.0	9.5	0.2	1.9	4.2	3.9	9.7	0.8	15.5	.755
	1961	42.7	6.3	3.9	8.0	0.3	1.7	4.8	4.5	10.2	0.7	17.0	.763
Toronto	1971	56.9	3.5	4.4	10.3	4.2	1.7	1.9	0.7	2.3	2.7	11.3	.646
	1961	61.3	3.3	4.4	7.4	4.7	2.1	2.3	0.9	2.5	1.1	10.2	.600
Vancouver	1971	58.6	4.0	8.3	2.8	1.0	3.0	1.4	4.8	2.9	5.4	8.0	.635
	1961	61.9	3.9	6.6	2.3	0.9	3.2	1.6	5.8	2.3	3.1	8.4	.598
Victoria	1971	74.9	3.1	4.8	0.9	0.2	2.3	0.9	3.5	1.3	2.7	5.3	.431
	1961	77.6	3.0	3.5	0.8	0.1	2.1	0.9	3.7	1.0	2.4	4.8	.391
Windsor	1971	48.1	20.4	5.2	7.8	1.0	1.1	2.3	0.5	2.7	1.6	9.4	.708
	1961	46.2	22.8	5.2	5.7	1.1	1.3	2.7	0.6	2.7	1.0	10.6	.716
Winnipeg	1971	43.0	8.6	11.5	1.7	3.6	2.8	4.8	3.2	11.9	1.4	7.6	.770
	1961	44.9	8.4	10.5	1.2	4.1	3.1	5.2	3.7	11.3	0.7	6.8	.756
Metropolitan Canada	1971	44.0	25.6	5.7	5.3	2.4	1.7	1.7	1.5	2.9	2.0	7.2	.727
	1961	45.0	26.7	5.3	4.0	2.7	2.0	1.9	1.8	2.7	0.9	7.1	.714
Nonmetropolitan Canada	1971	45.4	32.3	6.7	1.0	0.1	2.3	1.2	2.1	2.5	0.5	5.9	.680
	1961	42.6	34.2	6.2	0.9	0.1	2.8	1.3	2.5	2.5	0.4	6.6	.691
Canada	1971	44.6	28.7	6.1	3.4	1.4	2.0	1.5	1.8	2.7	1.3	6.6	.708
	1961	43.8	30.4	5.7	2.5	1.4	2.4	1.6	2.1	2.6	0.7	6.8	.705

Census Metropolitan Area	Year	Anglican	Baptist	Greek Orthodox*	Jewish	Lutheran	Mennonite and Hutterite	Pentecostal	Presbyterian	Roman Catholic	Ukrainian Catholic†	United Church	Other‡	Index of religious diversity
Calgary	1971	13.7	3.7	1.2	0.8	7.1	0.7	1.3	4.5	22.1	1.0	29.0	15.1	.817
	1961	16.6	4.0	1.0	1.0	7.6	0.4	1.0	5.5	19.4	0.6	34.9	7.8	.796
Chicoutimi-Jonquière	1971	0.6	0.6	0.1	0.0	0.1	0.0	0.0	0.1	96.1	0.6	1.1	0.7	.076
	1961	0.9	0.1	0.0	0.0	0.1	0.0	0.0	0.1	97.5	0.0	1.0	0.2	.049
Edmonton	1971	10.2	2.9	4.4	0.5	7.6	0.3	1.3	3.1	25.7	3.7	26.3	13.8	.824
	1961	12.2	3.3	4.9	0.7	8.6	0.2	1.0	3.8	24.0	3.2	31.0	7.1	.813
Halifax	1971	23.8	7.8	0.5	0.6	1.0	0.0	0.6	2.8	37.7	0.1	19.6	5.5	.753
	1961	26.2	8.1	0.3	0.6	1.2	0.0	0.4	3.0	37.6	0.1	20.7	1.8	.739
Hamilton	1971	18.0	3.9	2.0	0.8	2.7	0.1	0.8	9.2	30.9	1.1	20.3	10.0	.809
	1961	20.8	4.3	1.8	1.0	3.0	0.1	0.6	10.2	26.9	1.2	24.4	5.9	.808
Kitchener	1971	10.5	4.1	1.0	0.5	14.4	2.3	1.2	7.9	32.6	0.4	15.8	9.3	.816
	1961	10.8	4.7	0.5	0.5	18.9	2.9	1.1	8.8	28.5	0.5	14.8	8.1	.832
London	1971	21.1	6.5	1.3	0.5	2.5	0.2	1.0	7.2	22.1	0.3	27.3	10.0	.812
	1961	23.7	7.3	1.0	0.6	2.6	0.1	0.8	7.9	18.2	0.3	32.1	5.4	.792
Montréal	1971	4.6	0.8	2.1	4.0	0.7	0.0	0.2	1.5	77.8	0.5	4.2	3.4	.388
	1961	6.0	0.4	1.4	4.6	0.9	0.0	0.2	2.0	78.4	0.3	4.8	1.0	.376
Ottawa-Hull	1971	12.4	1.4	0.7	1.1	1.7	0.0	0.3	3.2	58.7	0.3	13.2	7.0	.617
	1961	13.7	1.6	0.7	1.2	1.8	0.0	0.3	3.8	59.5	0.2	14.8	2.4	.603
Québec	1971	0.6	0.4	0.1	0.1	0.0	0.0	0.0	0.2	96.4	0.3	0.9	1.1	.071
	1961	0.9	0.1	0.1	0.1	0.1	0.0	0.0	0.3	97.9	0.0	0.4	0.2	.042
Regina	1971	9.3	1.8	2.7	0.6	11.8	0.4	1.0	2.7	30.7	2.1	28.1	8.8	.794
	1961	11.9	1.8	3.3	0.7	11.8	0.2	0.7	3.3	27.7	1.5	33.0	4.3	.783
St. Catharines-Niagara	1971	17.6	3.2	1.4	0.4	4.4	2.0	0.9	7.4	36.7	1.1	16.9	8.3	.790
	1961	19.8	3.4	1.2	0.4	4.8	2.0	0.7	8.3	33.1	1.1	19.6	5.5	.799
St. John's	1971	26.2	0.3	0.0	0.1	0.1	0.0	1.4	1.5	47.4	0.0	18.1	4.8	.671
	1961	26.2	0.3	0.0	0.1	0.2	0.0	0.8	1.6	47.9	0.1	19.4	3.4	.662
Saint John	1971	22.1	13.9	0.2	0.3	0.3	0.0	2.0	2.3	38.7	0.0	15.4	4.8	.755
	1961	24.1	15.3	0.1	0.5	0.5	0.0	1.5	2.7	36.3	0.0	16.3	2.5	.758
Saskatoon	1971	10.4	1.8	2.6	0.4	6.7	4.5	1.0	3.0	23.1	4.8	31.0	10.8	.817
	1961	12.1	2.3	2.6	0.8	6.3	5.0	0.9	3.6	19.8	4.1	36.5	6.0	.799
Sudbury	1971	7.0	1.8	1.0	0.2	4.6	0.1	0.7	2.3	63.3	1.4	12.6	5.0	.573
	1961	7.5	1.6	1.2	0.2	6.0	0.1	0.3	2.6	62.0	1.7	15.3	1.5	.582
Thunder Bay	1971	12.1	2.2	2.4	0.1	10.8	0.1	0.5	6.1	34.3	2.7	22.0	6.6	.797
	1961	13.1	2.6	3.4	0.3	12.0	0.0	0.5	7.4	31.6	3.0	23.0	3.0	.806
Toronto	1971	17.4	3.2	3.2	3.9	2.8	0.1	0.7	6.9	32.0	1.0	18.0	10.6	.814
	1961	21.8	3.7	2.3	4.6	3.4	0.1	0.4	8.3	25.7	1.1	24.3	4.3	.813
Vancouver	1971	17.1	3.1	1.2	0.8	5.9	0.8	1.3	5.1	17.9	0.6	23.3	22.8	.825
	1961	22.3	3.6	1.2	0.9	6.7	0.7	1.0	6.2	16.2	0.5	30.8	9.9	.810
Victoria	1971	29.6	3.0	0.4	0.2	3.2	0.1	1.2	6.4	13.6	0.2	24.3	17.8	.797
	1961	37.4	2.9	0.3	0.1	2.9	0.0	0.8	7.4	12.2	0.2	27.2	8.5	.757
Windsor	1971	12.8	3.2	2.8	0.9	2.4	0.1	0.8	4.6	53.2	1.0	12.6	5.7	.677
	1961	14.6	3.5	2.7	1.1	2.5	0.1	0.7	5.7	49.4	1.0	15.6	3.0	.703
Winnipeg	1971	12.9	2.0	2.6	3.4	6.9	3.3	0.9	3.1	25.9	5.9	23.9	9.2	.838
	1961	14.9	2.0	2.9	4.1	7.6	2.9	0.8	3.2	23.7	5.8	28.2	3.9	.827
Metropolitan Canada	1971	12.7	2.6	2.0	2.2	3.4	0.4	0.7	4.3	45.8	1.1	15.6	9.1	.737
	1961	15.2	2.7	1.7	2.6	3.7	0.4	0.5	5.0	44.2	1.0	18.9	4.0	.739
Nonmetropolitan Canada	1971	10.7	3.7	0.8	0.1	3.3	1.3	1.4	3.7	46.9	1.0	19.7	7.4	.720
	1961	11.2	3.8	1.0	0.1	3.5	1.3	1.1	4.0	47.3	1.1	21.3	4.4	.712
Canada	1971	11.8	3.1	1.5	1.3	3.3	0.8	1.0	4.0	46.2	1.1	17.5	8.4	.731
	1961	13.2	3.3	1.3	1.4	3.6	0.8	0.8	4.5	45.7	1.1	20.1	4.2	.727

*includes those churches which observe the Greek Orthodox rite, such as Russian Orthodox, Ukrainian Orthodox and Syrian Orthodox.

† Because of the adjacent positions of "catholique romaine" and "catholique ukrainienne" on the French questionnaire in 1971, it would appear that the number of Ukrainian Catholics in Canada is overestimated by about 14,000 persons and Roman Catholics are underestimated by this number. This error involves approximately 0.3 percent of the French-speaking population in 1971, and accounts for much of the apparent increase

in the percentage Ukrainian Catholic in the Chicoutimi-Jonquière, Montréal and Québec CMAs.

‡ Includes "no religion."

Sources:
Canada, Statistics Canada, 1971 Census of Canada: Population: Religious Denominations, Bulletin 1. 3-3, Cat. No. 92-724
(Ottawa: Information Canada, 1973);

Canada, Statistics Canada, 1971 Census of Canada: Population: Denominations by Ethnic Groups, Bulletin 1.4-7, Cat. No. 92-735
(Ottawa: Information Canada, 1974);

Canada, Dominion Bureau of Statistics, 1961 Census of Canada: Population: Religious Denominations, Bulletin 1. 2-6, Cat. No. 92-546
(Ottawa: Queen's Printer, 1962);

Canada, Dominion Bureau of Statistics, 1961 Census of Canada: Population: Religion by Ethnic Groups, Bulletin 1. 3-8, Cat. No. 92-559
(Ottawa: Queen's Printer, 1964);

Canada, Dominion Bureau of Statistics, 1961 Census of Canada: Population: Religious Denominations: Counties and Subdivisions, Bulletin SP-3, Cat. No. 92-527
(Ottawa: Queen's Printer, 1963);

1961 census microfilm tabulations.

Table 5.7 Assimilation of language groups in Metropolitan Canada, 1971

Ethnic origin/ Language	*Percent of Metropolitan Canada's population by:*		
	Ethnic origin*	Mother tongue†	Language spoken at home‡
British Isles/English	44.0	60.1	67.3
French	25.6	24.2	23.1
German	5.7	2.6	1.0
Italian	5.3	4.1	3.3
Ukrainian	2.9	1.5	0.7
Jewish/Yiddish	2.4	0.4	0.2
Netherlands	1.7	0.6	0.1
Polish	1.7	0.8	0.5
Scandinavian	1.5	0.3	0.1
Chinese and Japanese	1.1	0.8	0.6
Greek	1.0	0.8	0.7
Hungarian/Magyar	0.7	0.5	0.3

* The language or cultural group to which a person or his ancestor on the male side belonged on coming to this continent.

† Language first learned to speak as a child and still understood.

‡ Language most often spoken in a person's home.

Although the degree of language assimilation can be inferred from Table 5.7, a much better indication of the extent to which each ethnic group has been assimilated in each metropolitan area is provided in Table 5.8. This table presents language retention rates, defined as the percentage of an ethnic group's population which reported its corresponding language as the language most often spoken at home in 1971. Notice the very low language retention rates among those of Scandinavian, Dutch and Jewish ethnic origin. Except for the British and French, the highest rate is among the Italians, followed by the Asian groups. Three-fifths of the population of Italian ethnic origin usually spoke Italian at home in 1971. The Ukrainians, Polish and Germans showed a moderate degree of language retention. Most of the French population also continued to speak French at home, but their retention rate was well below that of the British.

There are also considerable differences among metropolitan areas in the language retention rates of any given ethnic group. The rate of French retention is especially variable among cities. Although the French language retention rate exceeds 90 percent in the three CMAs in Québec, the erosion of the French language outside the province is very evident. A majority of the French ethnic population in Sudbury and Ottawa-Hull still spoke French at home in 1971, but elsewhere outside Québec, the majority of the French ethnic population had abandoned the French language. Even in Winnipeg, Windsor, Saint John, Halifax and St. Catharines-Niagara, where the largest French ethnic minorities are found, considerably less than half the French population spoke French at home. Figure 5.1 shows that a high percentage of the population in a metropolitan area must be of French ethnic origin in order for their language to survive. This graph also raises the question of why the French language rate varies so much among the metropolitan areas in the 7 to 20 percent range of French ethnic origin. Windsor's retention rate is so low partly because French ethnic roots date from the French regime in North America. The sheer amount of time since the French became a minority group may provide part of the explanation for city differences in French language retention rates, but other factors may be operating as well. Why has French survived even as much as it has in St. Catharines-Niagara and Winnipeg?

In some cities, the British, too, have abandoned English as the language spoken at home. In Québec City and Chicoutimi, where French is by far the majority language, less than half the population of British ethnic origin spoke English at home. Even in Montréal those of British origin had not retained English as the lan-

guage spoken at home to the same extent as the French ethnic population had retained French. All the major immigrant groups in Montréal, however, were being assimilated into the English-speaking segment of Montréal society, except the Italians who adopted English and French in roughly equal numbers.

One would expect that language retention rates of most ethnic groups other than British and French would be closely related to their length of residence in Canada. In order to investigate this relationship, it is necessary to distinguish the Canadian-born from the foreign-born elements of each ethnic group. Table 5.9 provides this information, with the foreign-born further subdivided by period of immigration. Similar data are provided for each metropolitan area in Table A5.1. It can be seen, for example, that 1.14 percent of the metropolitan population were Canadian-born of Scandina-

vian descent; that 0.93 percent were Asian immigrants who had arrived since 1961, etc. Also, it is evident that the ethnic composition of immigrants to our metropolitan areas has changed. The French are almost entirely Canadian-born and, at the other extreme, the Asians are mainly immigrants, most of whom arrived very recently. The 11 groups, when ranked by the percentage of their population which was born in Canada, are as follows: French, British, Ukrainian, Scandinavian, German, Jewish, Polish, Netherlands, "other and unknown", Italian and Asian. Only the last three groups have a foreign-born majority.

Figure 5.2 shows that ethnic groups with a large foreign-born percentage have the highest language retention rates. Among the groups shown, the Italians and Asians have the highest rates because most of them are foreign-born. But the relationship is confused by other

Table 5.8 Language retention rates of ethnic groups, Census Metropolitan Areas, 1971*

Census Metropolitan Area

Ethnic group	Calgary	Chicoutimi-Jonquière	Edmonton	Halifax	Hamilton	Kitchener	London	Montréal	Ottawa-Hull	Québec	Regina
British Isles	99.8	47.2	99.6	99.8	99.7	99.7	99.9	88.5	97.1	44.4	99.8
French	7.8	98.8	20.0	12.9	17.4	17.0	7.4	95.8	80.4	98.6	7.7
German	9.0	3.7	12.1	1.0	16.9	15.1	11.8	23.4	11.2	6.1	6.7
Italian	45.5	7.5	52.4	37.0	54.2	42.8	43.2	65.4	54.5	18.3	37.7
Jewish	5.1	0.0	4.0	5.3	4.3	6.0	4.3	10.4	3.8	0.0	2.3
Netherlands	8.5	11.5	7.5	1.9	9.9	7.2	9.2	13.2	7.4	0.0	3.7
Polish	10.4	50.0	11.8	9.9	29.8	20.5	27.2	36.5	20.1	3.3	6.3
Scandinavian†	1.6	0.0	1.3	7.2	4.0	6.7	4.1	5.7	2.5	0.0	0.9
Ukrainian	8.2	16.7	15.3	0.7	27.9	17.8	25.0	40.0	14.2	0.0	10.6
Asian Groups	42.3	10.3	47.3	33.0	26.6	26.3	34.3	28.9	39.9	39.5	42.5

* The language retention rate is the percentage of an ethnic group's population which reported the corresponding language as the language most often spoken at home, e.g., the percentage of those of German ethnic origin reporting German as the language most often spoken at home.

† Danish, Icelandic, Norwegian and Swedish.

Source:
Canada. Statistics Canada. *1971 Census of Canada: Population: Language by Ethnic Groups*, Bulletin 1, 4-8. Cat. No. 92-736 (Ottawa: Information Canada, 1974).

factors. The lower rate of language retention among the Asians than the Italians is readily explained by the fact that more of the foreign-born Asians than of the foreign-born Italians claimed English as mother tongue. Many Asians in Canada have come from India, Pakistan and Hong Kong, where English is spoken as a second language, if not as a mother tongue.[2] Their language assimilation in Canada, therefore, is more rapid than among the Italians. Among the ethnic groups whose population was 20-40 percent foreign-born, the Ukrainians stand out for their high rate of language retention. The Ukrainian Orthodox and Ukrainian Catholic churches have played a major role in the preservation of the Ukrainian language in Canada.[3] The Jews and Dutch, on the other hand, show low rates of language retention, given that about 40 percent of the population in these ethnic groups was foreign-born. The explana-

tion of the low retention rate among Jews is simple enough: only one-third of the foreign-born Jews in Canada claimed Yiddish mother tongue, while 37 percent were of English mother tongue, having immigrated from the United States, England and other English-speaking countries. Few Jews, therefore, could be expected to "retain" a language that was not their mother tongue. The low retention rate among the Dutch, on the other hand, would appear to reflect a genuinely fast rate of adoption of English as the language spoken at home.

For most ethnic groups, differences among metropolitan areas in language retention rates are well explained by differences in the percentage of their population which was foreign-born. For example, the language retention rate of the German ethnic population in Montréal and Toronto is higher than elsewhere because a higher percentage of them in Montréal and Toronto

Table 5.8 *(Concluded)*

St. Catharines-Niagara	*St. John's*	*Saint John*	*Saskatoon*	*Sudbury*	*Thunder Bay*	*Toronto*	*Vancouver*	*Victoria*	*Windsor*	*Winnipeg*	*Metropolitan Canada*
99.7	99.9	99.7	99.7	97.8	99.6	99.6	99.7	99.9	99.6	99.5	98.3
38.7	7.9	24.6	13.3	67.6	10.1	17.0	11.2	7.2	18.3	35.3	84.2
16.0	7.7	4.8	6.8	10.2	12.6	22.0	14.2	9.2	15.1	19.1	15.1
44.7	12.0	7.4	32.9	42.6	40.5	68.7	39.0	22.6	57.4	54.6	61.1
2.5	6.5	8.2	2.6	1.7	4.3	8.5	2.7	1.0	8.4	10.2	8.7
8.6	2.0	1.3	3.7	1.9	7.1	8.2	7.1	8.9	3.5	7.1	7.9
29.3	0.0	0.0	5.8	24.5	23.5	33.5	8.5	7.7	21.7	16.4	23.6
4.7	1.1	0.6	1.1	2.7	1.8	6.6	2.8	2.2	6.1	1.5	2.8
24.2	0.0	8.8	20.4	22.1	15.8	35.0	7.9	5.5	21.2	22.3	21.6
17.8	25.5	18.3	43.9	28.9	29.6	36.7	54.7	53.3	33.2	26.9	40.1

Figure 5.1 Language retention rate of French ethnic origin, Census Metropolitan Areas, 1971

Language retention rate (%)

100 — Chicoutimi–Jonquière
        Québec
90 —   Montréal

80 — Ottawa–Hull

70 —
        Sudbury
60 —

50 —

40 — St. Catharines–Niagara
        Winnipeg
30 —

        Saint John
20 —   Hamilton   Edmonton
        Toronto Kitchener   Windsor
        Vancouver   Saskatoon   Halifax
10 —   London Regina Thunder Bay
        Victoria Calgary
        St. John's
0 —

1   2   5   10   20   50   100

% French ethnic origin
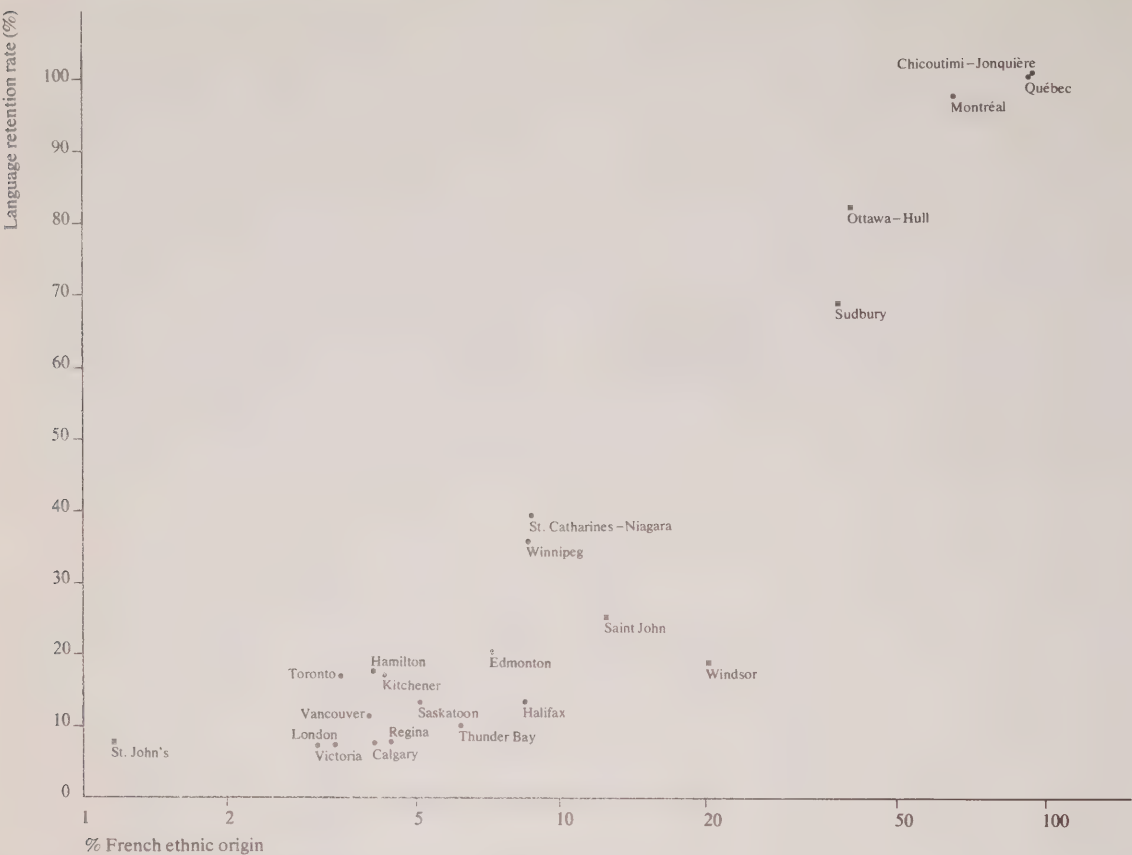
Figure 5.2 Language retention and percent foreign-born of ethnic
groups, Metropolitan Canada, 1971

Language retention rate (%)

70 —

60 — Italian

50 —

40 — Asian

30 —

20 — Ukrainian Polish

10 — German
        Jewish
        Netherlands
0 — Scandinavian

0   10   20   30   40   50   60   70
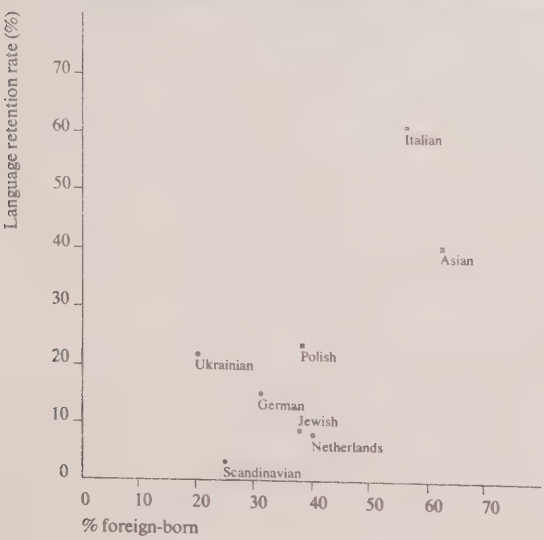
% foreign-born

was foreign-born than was the case elsewhere. The relationship between the percentage foreign-born and the language retention rate in metropolitan areas holds true for the German, Italian, Dutch, Polish, Scandinavian and Ukrainian ethnic groups as shown in Figures 5.3 to 5.8.[4] For all these groups, the relationship between foreign birth and language retention is very strong.

Cities which deviate the most from the relationships shown in Figures 5.3 to 5.8 are generally those which have an especially high proportion of their population in the ethnic group in question. In Figure 5.3, for example, Winnipeg, St. Catharines, Edmonton, Kitchener, Regina and Saskatoon all have higher German language retention rates than one would expect from the percentage of their German population which was foreign-born. These are also the metropolitan areas with the highest percentage of their population of German ethnic origin. Minority languages apparently survive better in cities where the minority is of substantial size, relative to the total population.

Different considerations apply to the Jewish and Asian groups, for which the relationship between foreign birth and language retention is weak. For these groups, city differences in language retention are better explained by the percentage of their foreign-born component with Yiddish and Asian mother tongue. Both the Jewish and Asian groups speak a variety of languages upon arrival in Canada, and therefore city differences in their rates of language retention must take into account differences in the mother tongue of immigrants. A much higher percentage of Asian immigrants in Manitoba, Ontario, Québec and the Atlantic provinces have English mother tongue than in the West.

Figure 5.3 Language retention and percent foreign-born of German ethnic origin, Census Metropolitan Areas, 1971

Figure 5.5 Language retention and percent foreign-born of Dutch ethnic origin, Census Metropolitan Areas, 1971

Figure 5.6 Language retention and percent foreign-born of Polish ethnic origin, Census Metropolitan Areas, 1971
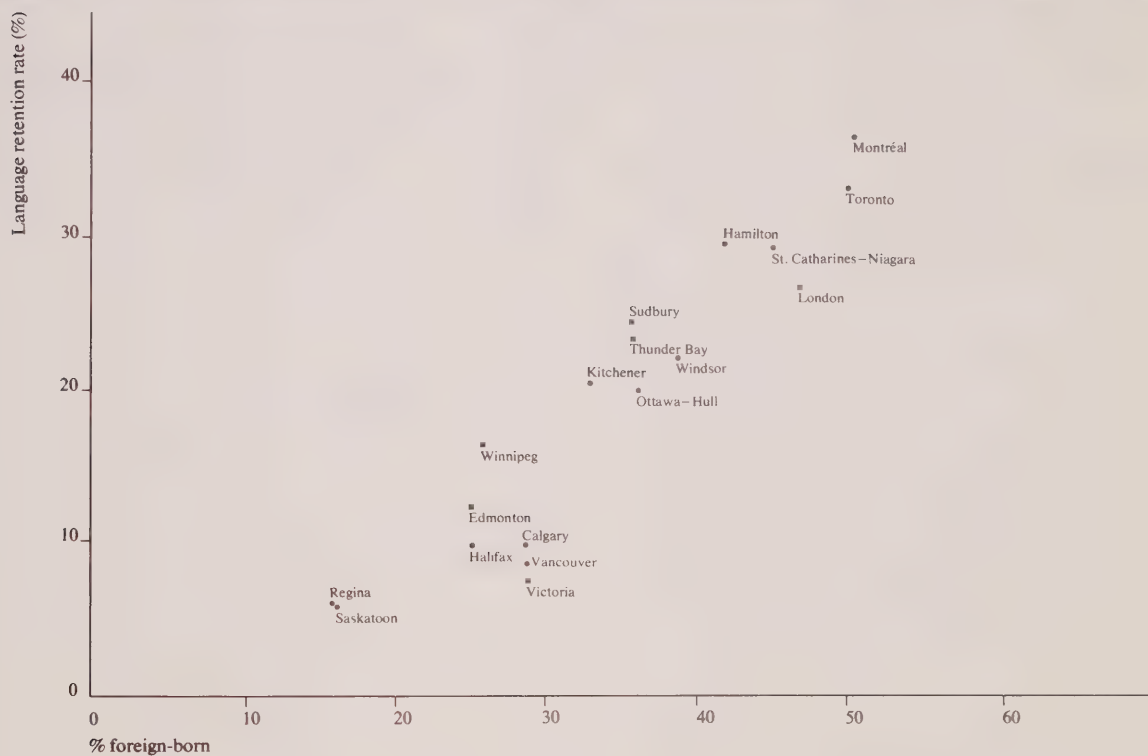
In summary, then, for most of the major ethnic groups, metropolitan differences in language retention rates are easily explained by whether the group tends to be foreign-born or Canadian-born. For the British, French, Asian and Jewish groups, however, special circumstances upset this relationship. When a high percentage of the population belongs to a minority ethnic group, the chances of its language surviving are greater than when the minority is a very small one.

5.4 Segregation of ethnic groups

Almost all large cities have neighbourhoods which are distinguished by the ethnic or cultural characteristics of their population. Some ethnic groups, however, tend to be more segregated than others; and also some cities are more segregated than others along ethnic lines.

This section explores differences among ethnic groups and among the metropolitan areas in Canada in 1971, according to their levels of segregation.

In order to compare ethnic groups and cities, a segregation index comparable to the indices used in connection with age and income groups was calculated for each of 10 ethnic groups in the 21 tracted CMAs. The index represents the proportion of the ethnic group's population which would have to move to a different census tract in order for that group's distribution to resemble the distribution of the rest of the population in that metropolitan area. Indices based on mother tongue or language spoken at home would usually be higher since, for many people, especially in the more assimilated groups, ethnic origin is of little significance.

The segregation indices are presented in Table 5.10. Although they are calculated for all 10 groups in each city, the indices for ethnic groups in metropolitan areas where an ethnic group comprised less than 0.5 percent of the population are unreliable because of rounding and sampling errors.[5] They are identified by the letter (a) and excluded from the row and column averages and from the following discussion.

Table 5.9 Ethnic origin by birthplace and period of immigration, Metropolitan Canada, 1971*

| Ethnic origin | Born in Canada | Period of immigration | | | Total |
		Before 1946	1946-1960	1961-1971†	
Asian	85,985	11,780	25,845	110,365	233,975
British Isles	4,371,760	335,735	271,095	247,325	5,225,920
French	2,970,770	19,565	23,340	31,965	3,045,695
German	459,310	34,625	132,385	44,735	671,060
Italian	276,035	19,470	192,485	146,385	634,340
Jewish	177,425	39,850	40,325	27,060	284,655
Netherlands	121,740	5,925	61,970	14,005	203,610
Polish	124,150	20,710	40,930	15,290	201,080
Scandinavian	135,085	19,655	16,480	8,640	179,820
Ukrainian	270,910	35,060	31,175	4,065	341,170
Other and Unknown	410,895	51,960	163,295	228,205	854,360
Total	**9,404,045**	**594,370**	**999,300**	**878,005**	**11,875,705**
	(%)	(%)	(%)	(%)	(%)
Asian	0.72	0.10	0.22	0.93	1.97
British Isles	36.81	2.83	2.28	2.08	44.01
French	25.02	0.16	0.20	0.27	25.65
German	3.87	0.29	1.11	0.38	5.65
Italian	2.32	0.16	1.62	1.23	5.34
Jewish	1.49	0.34	0.34	0.23	2.40
Netherlands	1.03	0.05	0.52	0.12	1.71
Polish	1.05	0.17	0.34	0.13	1.69
Scandinavian	1.14	0.17	0.14	0.07	1.51
Ukrainian	2.28	0.30	0.26	0.03	2.87
Other and Unknown	3.46	0.44	1.38	1.92	7.19
Total	**79.19**	**5.00**	**8.41**	**7.39**	**100.00**

* Since entries in this table are independently rounded, rows and columns may not add to total.

† Includes the first five months only of 1971.

Sources:
Canada, Statistics Canada, *1971 Census of Canada: Population: Ethnic Groups by Birthplace*, Bulletin 1. 4-10, Cat. No. 92-738 (Ottawa: Information Canada, 1974);

Canada, Statistics Canada, *1971 Census of Canada: Population: Characteristics of Persons Born Outside Canada*, Bulletin 1.4-12, Cat. No. 92-740 (Ottawa: Information Canada, 1974);

Special tabulation by Statistics Canada from 1971 census.

Figure 5.7 Language retention and percent foreign-born of Scandinavian ethnic origin, Census Metropolitan Areas, 1971
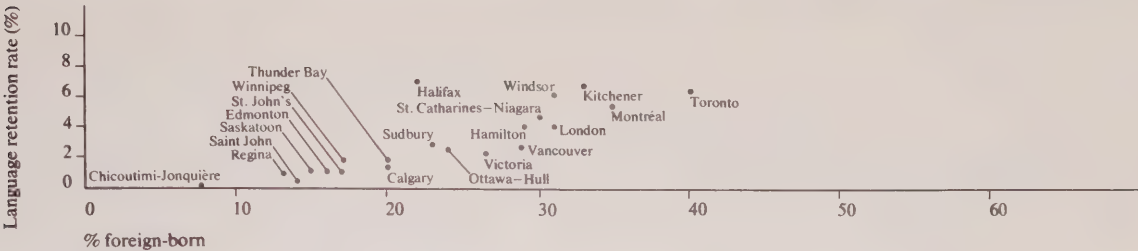
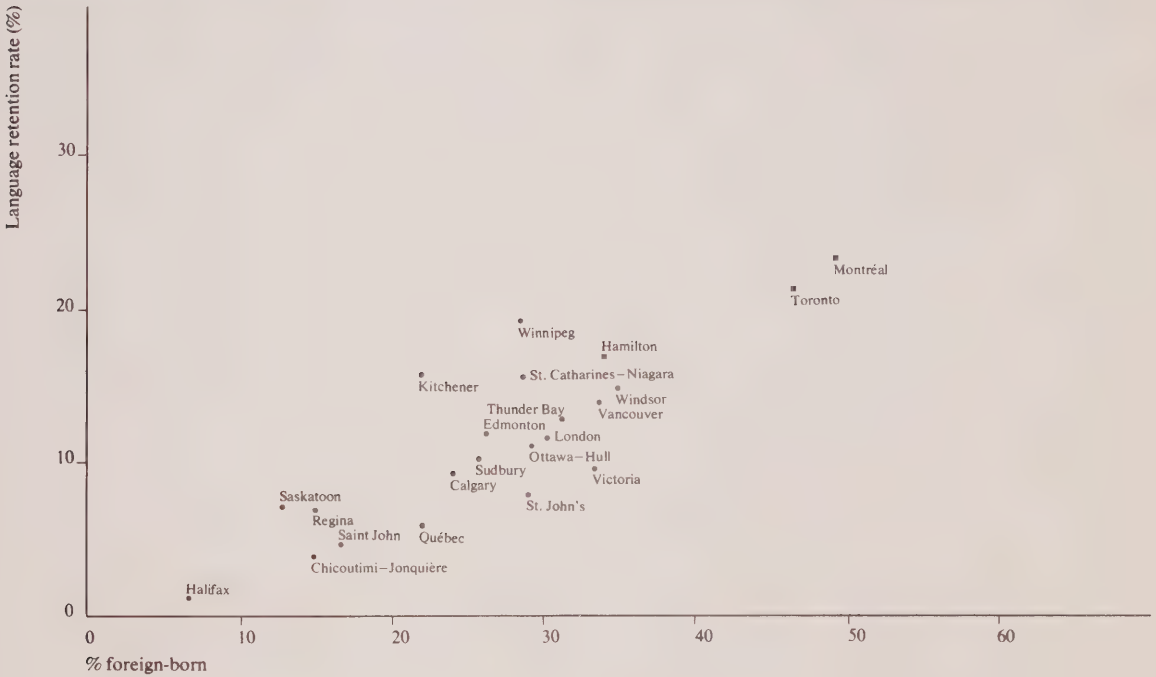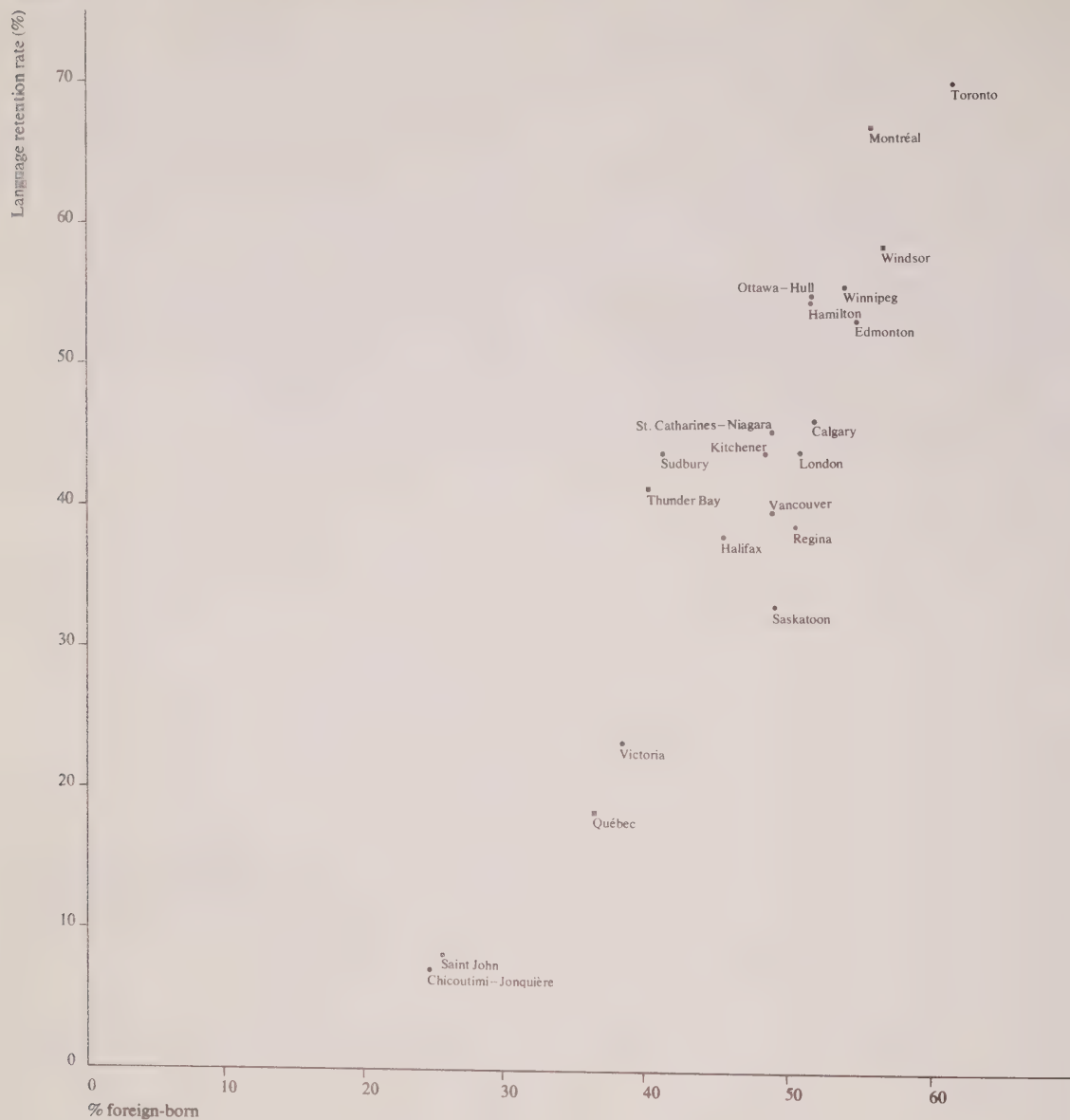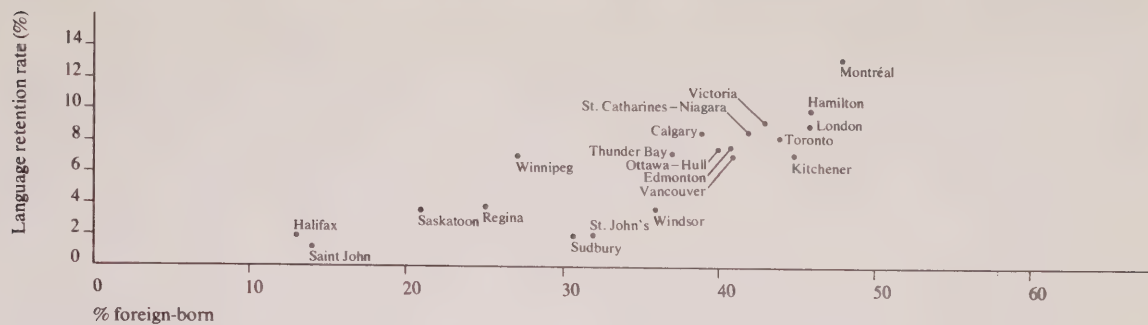**Figure 5.8** Language retention and percent foreign-born of Ukrainian ethnic origin, Census Metropolitan Areas, 1971
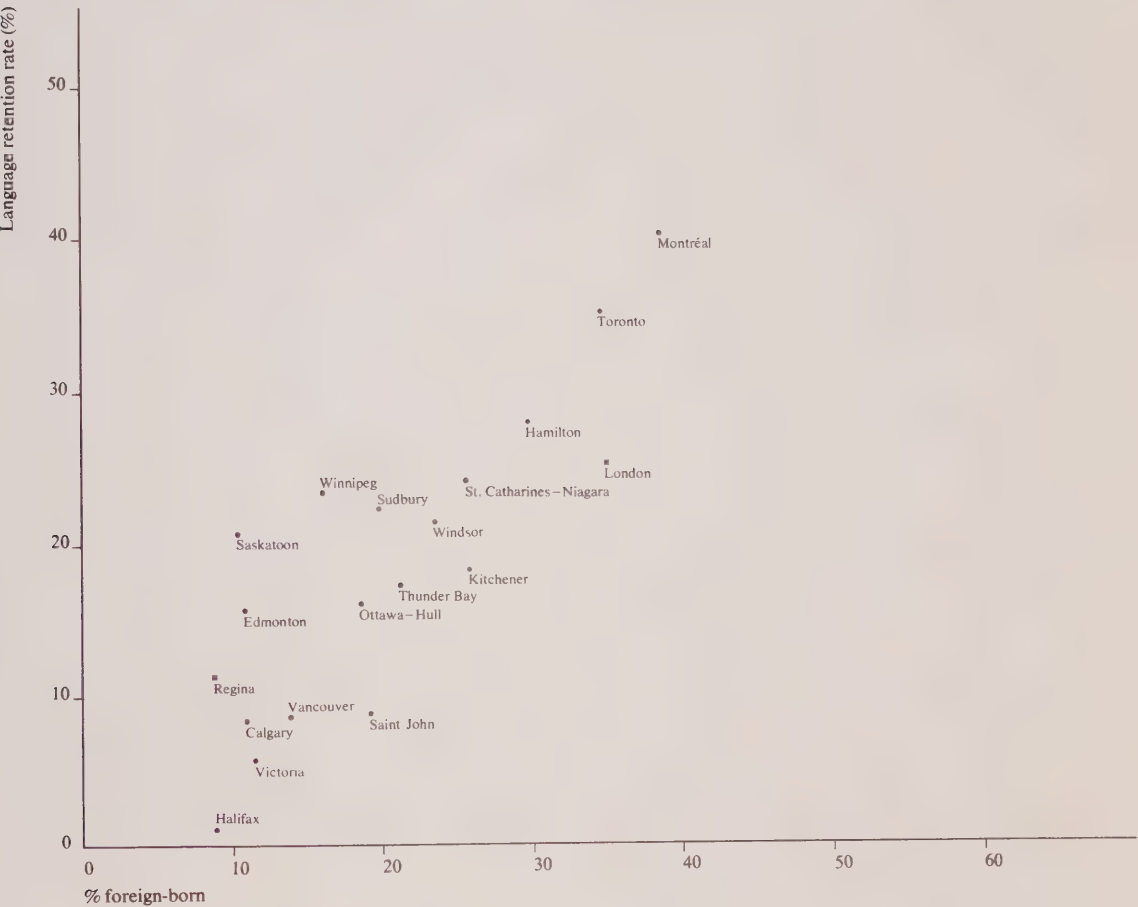
Figure 5.9 Ethnic segregation and population, Census Metropolitan Areas, 1971
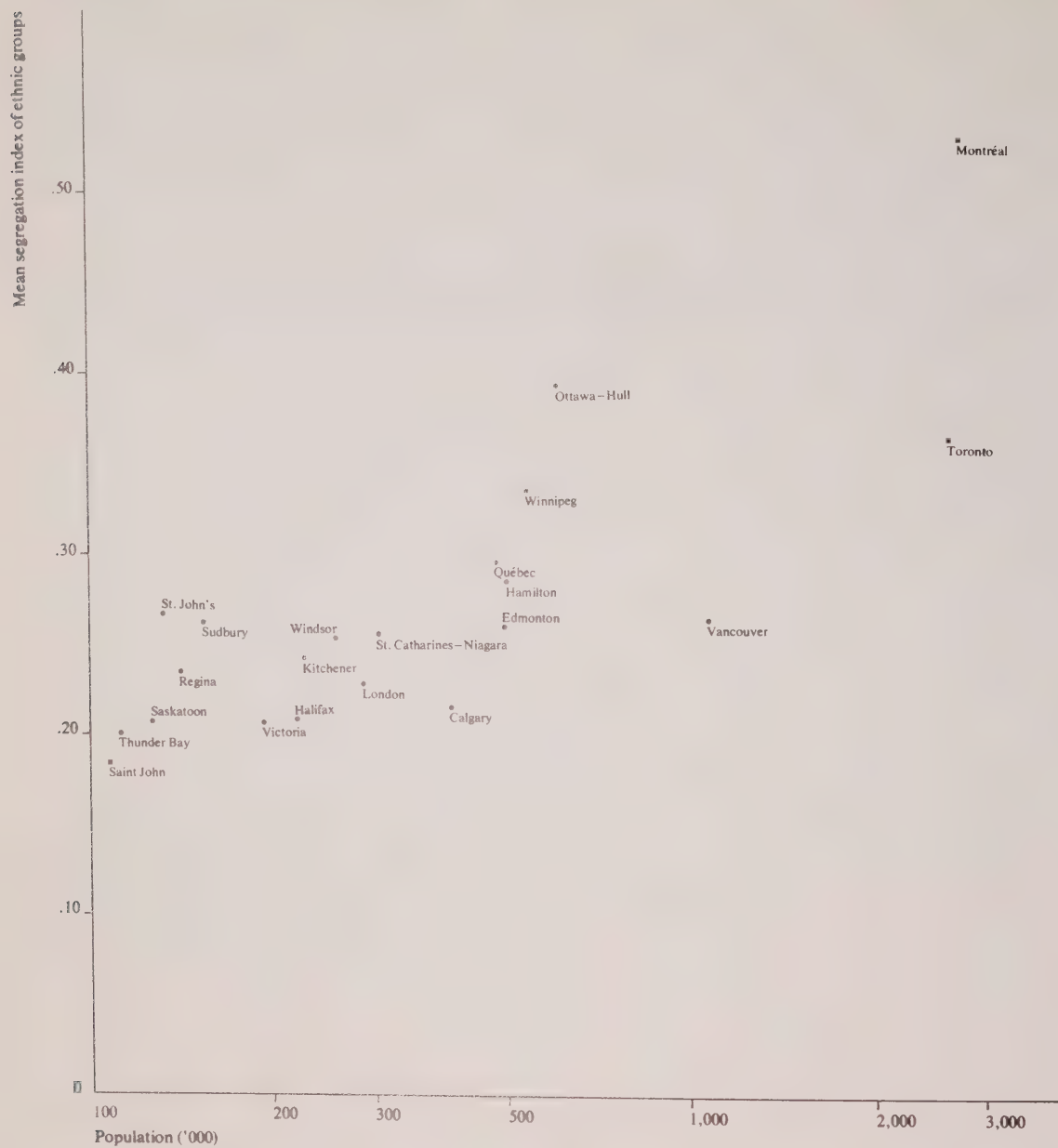
The Jewish population is by far the most segregated group in Canadian cities. In every metropolitan area in which they are numerous enough for a reliable segregation index to be calculated, with the exception of Ottawa-Hull, they are the most segregated group. Their level of segregation in Montréal and Toronto is as high as the usual level of white-nonwhite segregation in American cities, and higher than segregation of Protestants and Catholics in Belfast.[6]

The Native Indian population—a group given little consideration in this study because they live mainly outside metropolitan areas—are also highly segregated when they do live in a metropolitan area. Several CMAs include Indian Reservations which, of course, contribute to residential segregation, but even in Calgary, Regina, Saskatoon and Winnipeg, which have no reservations, the Indian population is highly segregated.

Ranking third according to level of segregation are the Italians. The Polish, Ukrainians, Dutch and French share similar degrees of segregation, but rank well behind the Italians. The Germans and Scandinavians have the lowest average segregation index—even lower than the British who occasionally are quite highly segregated, especially in cities with a French-speaking majority or in cities with a large number of unassimilated ethnic minorities, e.g., Winnipeg and Toronto.

Ethnic differences in segregation are undoubtedly related to measures of assimilation into Canadian society. In most of the ensuing discussion, the focus is on *metropolitan* differences in ethnic segregation rather than upon *ethnic* differences in ethnic segregation. The argument which follows, however, could easily be adapted to the explanation of ethnic differences.

Consider, then, the variation among metropolitan areas in their average level of ethnic group segregation. As shown in Figure 5.9, there is a strong relationship between population size and the level of ethnic segregation, especially above the half-million population threshold. Population (actually, the logarithm of population) will ''explain'' 63 percent of the variance among metropolitan areas in their mean ethnic segregation index. Montréal's ethnic groups are the most highly segregated, followed by those in Ottawa-Hull. Metropolitan areas with both strong French and English components tend to have a high level of segregation for their population size.

Figure 5.10 A model of ethnic segregation

Strong link

Weak link
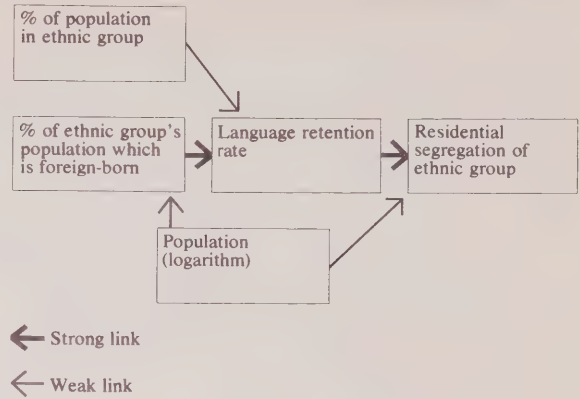
In the explanation of differences among metropolitan areas and among ethnic groups in levels of segregation, the measure of language assimilation developed in section 5.3 plays a key role. A particular ethnic group is more highly segregated in cities where a higher proportion of the group retains its ancestral language than in cities where its language assimilation is virtually complete. Similarly, in each city, the most highly segregated groups are likely to be those which are least assimilated in terms of language. Residential segregation is itself a measure of assimilation, and should be related to the measure of assimilation based on language retention. Table 5.11 confirms that, for most ethnic groups, there is in fact a fairly strong relationship between level of segregation and language retention rates in Canadian metropolitan areas. But population size is also positively related to segregation levels of most ethnic groups.

The way in which all the measures in Table 5.11 fit together is shown in Figure 5.10. The model applies to one ethnic group at a time and explains why metropolitan areas differ in the residential segregation of that particular ethnic group. The main determinant of a city's residential segregation index for an ethnic group is the language retention rate, but a large population also promotes a higher level of segregation. Language retention rates in turn are primarily determined by the extent to which the ethnic group's population is foreign-born, but a high proportion of the city's population belonging to that group also contributes to a higher rate of language retention. A large population also contributes to a high rate of language retention, but only indirectly through its influence on the percentage of the ethnic group's population which is foreign-born. Because of the continuing relationship between city size and immigration, a higher percentage of each ethnic group's population is likely to be foreign-born in larger metropolitan areas than in smaller ones.

The model of residential segregation in Figure 5.10 was tested for a number of minorities in Metropolitan Canada.[7] For the Italian, Polish and Ukrainian ethnic groups the model works exceptionally well, producing higher levels of explanation than most quantitative models in social research. Even for the Scandinavians the model works quite well, considering the advanced stage of assimilation of this group into Canadian society. For the Dutch and German groups the first part of the model (i.e., the part explaining language retention rates) also works very well, but the final step in the model is weak. For these two groups, language retention rates and population do not provide a good explanation of metropolitan differences in segregation. For

Table 5.10 Segregation indices of ethnic groups, Census Metropolitan Areas, 1971*

Census Metropolitan Area

Ethnic group	Calgary	Edmonton	Halifax	Hamilton	Kitchener	London	Montréal	Ottawa-Hull	Québec	Regina
British Isles	.103	.138	.051	.164	.214	.093	.502	.448	.292	.161
French	.111	.174	.107	.178	.140	.129	.503	.561	.279	.064
German	.113	.146	.084	.141	.233	.088	.375	.249	.306	.177
Italian	.355	.452	.270	.380	.234	.330	.567	.481	.332 (a)	.360
Jewish	.484	.587	.571	.594	.474	.529	.833	.492	.770 (a)	.570
Native Indian	.436	.367	.504 (a)	.434 (a)	.348 (a)	.447 (a)	.472 (a)	.368 (a)	.487 (a)	.381
Netherlands	.170	.199	.144	.339	.165	.208	.508 (a)	.335	.583 (a)	.184
Polish	.152	.192	.318 (a)	.291	.224	.206	.417	.315	.633 (a)	.167
Scandinavian†	.100	.099	.229	.232	.283	.207	.533 (a)	.307	.616 (a)	.122
Ukrainian	.104	.221	.347 (a)	.215	.199	.256	.445	.312	.779 (a)	.153
Average	**.213**	**.258**	**.208**	**.282**	**.241**	**.227**	**.520**	**.389**	**.292**	**.234**

* Segregation indices for ethnic groups comprising less than 0.5 percent of the population are unreliable. They are marked with the letter (a) and are excluded from the row and column averages.

Source:
Calculated from 1971 census summary tapes by Serge Carlos of Université de Montréal under contract with Ministry of State for Urban Affairs.

† Danish, Icelandic, Norwegian and Swedish.

the Jewish group, on the other hand, the final step in the model works very well but, as noted earlier, language retention among the Jewish population must also take into account the proportion of foreign-born Jews with Yiddish mother tongue.

The model can also be adapted to explain the levels of British and French segregation. French language retention rates, of course, depend not upon the percent of the French population which was foreign-born, but rather upon the relative size of the French population. Once language retention rates are explained, the segregation of the French population in different cities is fairly well explained by the language retention rate (Figure 5.11).

This model of ethnic segregation is valuable not only for its generally high level of explanation but also for what it fails to explain, since the instances of poor explanation help to isolate special circumstances under which language retention and segregation do not behave as expected. For example, the second part of the model for the German group works so poorly partly because of the high levels of German segregation in St. John's and Québec City, given the low rates of language retention. The Germans in these two cities have an average family income well above that of the metropolitan average, and part of their ethnic segregation is actually income

segregation.[8] This finding suggests the hypothesis that, in general, the extent to which an ethnic group's income deviates from the average may add further explanation to the model presented earlier.

The final point to be made about the residential segregation model is that, although it suggests that language retention influences residential segregation, residential segregation also contributes to language retention. The two are mutually-reinforcing attributes of an ethnic group.

5.5 Ethnic neighbourhoods

This section examines the numbers, types and spatial patterns of ethnic neighbourhoods in each metropolitan area in Canada.

The same types of ethnic neighbourhoods are not found in all metropolitan areas in Canada. In order for a city to have a Polish neighbourhood, for example, a number of conditions must be met:

a) it must have enough Polish people to form a neighbourhood;

b) the Polish people must be segregated from other ethnic groups;

c) a substantial proportion of the population of Polish origin must have retained enough distinctly

Table 5.10 *(Concluded)*

St. Catharines-Niagara	St. John's	Saint John	Saskatoon	Sudbury	Thunder Bay	Toronto	Vancouver	Victoria	Windsor	Winnipeg	Average
.183	.225	.112	.120	.216	.154	.318	.148	.113	.143	.244	.197
.302	.239	.163	.129	.348	.130	.190	.179	.157	.220	.392	.224
.239	.335	.214	.092	.130	.133	.158	.158	.098	.133	.193	.181
.356	.450 (a)	.435 (a)	.358	.437	.257	.564	.456	.253	.314	.388	.378
.568 (a)	.675 (a)	.476 (a)	.548	.565 (a)	.491 (a)	.730	.522	.357 (a)	.516	.689	.581
.362 (a)	.728 (a)	.575 (a)	.297	.241 (a)	.275	.405 (a)	.425	.538	.439 (a)	.488	.401
.283	.399 (a)	.213	.108	.207	.361	.301	.223	.189	.249	.216	.227
.213	.713 (a)	.575 (a)	.155	.265	.192	.381	.185	.229	.227	.253	.239
.229	.300 (a)	.218	.090	.242	.132	.244	.124	.117	.231	.149	.186
.224	.770 (a)	.569 (a)	.181	.243	.166	.339	.176	.158	.225	.306	.231
.254	**.266**	**.184**	**.208**	**.261**	**.200**	**.358**	**.260**	**.206**	**.251**	**.332**	**.309**

Figure 5.11 French language retention and ethnic segregation, Census Metropolitan Areas, 1971

Table 5.11 Correlates of ethnic group segregation, Census Metropolitan Areas, 1971*

| | Correlation coefficient between ethnic segregation index and: | | | |
Ethnic origin	Language retention rate	Percent of the ethnic group which was foreign-born	Percent of population in the ethnic group	Logarithm of population
German	.26	.28	−.23	.30
Italian	.69	.61	.27	.81
Jewish	.67	.19	.88	.68
Netherlands	.42	.45	−.11	.34
Polish	.75	.71	−.36	.73
Scandinavian	.64	.54	−.94	.16
Ukrainian	.80	.69	−.23	.70

* Correlation coefficients were calculated using CMAs as units of observation. CMAs were excluded when less than 0.5 percent of the population was of the specified ethnic origin. Language retention rates are defined in Table 5.8. Segregation indices are defined in the text, section 5.4. Correlation coefficients are discussed in section 3.5.

Sources:
Tables 1.2, 5.5, 5.8, 5.10, and A5.1.

Polish characteristics that their Polish ethnic origin has some real social significance.

If a city has only 200 people of Polish ethnic origin, it is most unlikely that they would sufficiently dominate even one neighbourhood to give it a Polish character. Even in a city with a large Polish element, if its Polish population is spread evenly across the city, particular neighbourhoods would not be distinguished on the basis of their Polish characteristics, at least within the context of that city. If most of the population of Polish ethnic origin are highly assimilated into the city's social structure, if they no longer speak Polish at home, if they no longer tend to marry within the Polish ethnic group – in short, if their Polish ethnic origin is of no consequence – then it would be misleading to call their neighbourhoods Polish.

Table 5.12 shows the frequency distribution of census tracts in Metropolitan Canada according to the percentage of their population in each of 10 ethnic groups. Only the British and French ethnic groups commonly comprise more than 50 percent of a census tract's population. Only 16 census tracts (nine in Toronto and seven in Montréal) were over 50 percent Italian. The 23 census tracts which were more than 50 percent Jewish were also all in Toronto (11) and Montréal (12). Toronto and Vancouver each had one census tract in which more than half the population was of Asian ethnic origin. No other ethnic groups comprised an absolute majority of the population in any census tracts in Metropolitan Canada in 1971, except, of course, the British and French.[9]

Unlike the other ethnic groups, the frequency distributions of the British and French are bimodal. A large group of census tracts have very few French and a second large group of tracts are almost all French. Similarly, a large group of tracts are less than 10 percent British, and a second large group have a British majority. The second peak in the frequency distribution occurs in the 60-70 percent range of British ethnic origin, compared to the 85-95 percent range of French ethnic origin (Figure 5.12). Census tracts with a French majority are commonly much more French than tracts with a British majority are British.

A neighbourhood does not have to have an absolute majority of its population in a particular ethnic group in order for it to have an ethnic "character". In fact, when even 10 percent of a neighbourhood's population belongs to an ethnic minority group, the neighbourhood is generally known as an ethnic neighbourhood, unless the ethnic minority is highly assimilated. An ethnic minority of 25 percent is a very strong presence on the mental maps of a city's residents. These

Table 5.12 Frequency distribution of census tracts by ethnic origin, Metropolitan Canada, 1971

Percent of population of specified ethnic origin	Number of census tracts with specified percentage of their population of specified ethnic origin									
	British	French	German	Italian	Jewish	Netherlands	Polish	Scandinavian	Ukrainian	Asian
0.0 - 9.9	448	1,329	1,950	1,992	2,166	2,249	2,239	2,264	2,136	2,202
10.0 - 19.9	134	178	245	142	45	17	26	3	99	54
20.0 - 29.9	118	89	44	63	13	1	2	—	25	5
30.0 - 39.9	180	58	24	30	8	—	—	—	6	2
40.0 - 49.9	277	56	4	24	12	—	—	—	1	2
50.0 - 59.9	334	36	—	12	9	—	—	—	—	2
60.0 - 69.9	375	63	—	1	9	—	—	—	—	—
70.0 - 79.9	314	76	—	3	3	—	—	—	—	—
80.0 - 89.9	56	191	—	—	2	—	—	—	—	—
90.0 - 100.0	31	191	—	—	—	—	—	—	—	—
Total	**2,267**	**2,267**	**2,267**	**2,267**	**2,267**	**2,267**	**2,267**	**2,267**	**2,267**	**2,267**

Source:
1971 census summary tapes.

Figure 5.12 Frequency distribution of census tracts by percent British and French ethnic origin, Metropolitan Canada, 1971
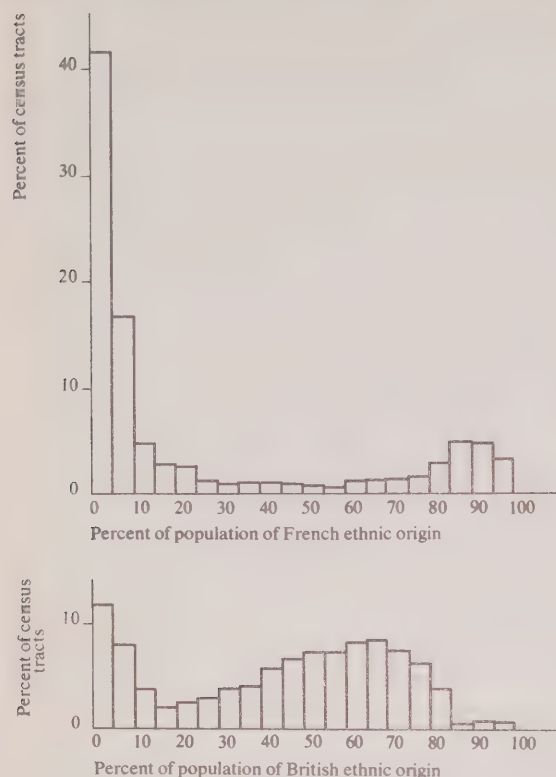
two thresholds, 10 and 25 percent, were used in compiling a series of ethnic maps for each metropolitan area. An ethnic minority was included on the map for a particular city provided that at least 10 percent of the population of at least one tract belonged to that ethnic group. Ethnic groups which had a language retention rate of less than 15 percent were excluded from the ethnic map for that city. If less than 15 percent of the population in an ethnic group continued to speak their ancestral language at home, it is unlikely that the ethnic group's presence would be felt very strongly. Since the language retention rate for the Jewish ethnic group is a poor measure of assimilation, Jewish areas were mapped whenever more than 10 percent of the tract population were Jewish, regardless of the language retention rate.

Special considerations were also necessary for mapping the British and French groups. In predominantly British cities the French were treated as any other ethnic group, i.e., the same threshold values of 10 and 25 percent were used, provided that the French had a language retention rate of 15 percent. The British in Québec City were dealt with similarly. In Montréal, Ottawa-Hull and Sudbury, where the British and French were more evenly balanced than elsewhere, these groups were both mapped using threshold values of 50 and 75 percent, rather than 10 and 25 percent. Finally, since the Italian, Jewish and Asian ethnic groups occasionally surpassed 50 percent of the population in census tracts in Toronto and Montréal, additional maps of dominant ethnic groups were also prepared for these cities showing all ethnic groups surpassing the 50 percent threshold in any census tract.

The series of ethnic maps which results from this set of rules governing the selection of ethnic groups for each city should agree well with the mental maps of the residents of each metropolitan area. Furthermore, the consistent mapping strategy greatly facilitates comparison among metropolitan areas, although the ethnic map for any one city may not be the best which could be drawn. No ethnic groups in St. John's, Halifax, London or Regina met the criteria for mapping. It must also be borne in mind that the selection of ethnic groups was restricted to those shown in Table 5.1. Certain ethnic neighbourhoods, such as the Greek areas in Montréal and Portuguese areas in Toronto, have been omitted because of a lack of data at the census tract level for very small ethnic minorities.

Figure 5.13 Population of French ethnic origin, Saint John CMA, 1971

Scale

0   5   10
kilometres

Ethnic origin	10-25%
French	⬤

Population
6,900 ○
4,400 ○
2,400 ○
700 ○

British
French
German
Netherlands
Scandinavian
Asian
Other
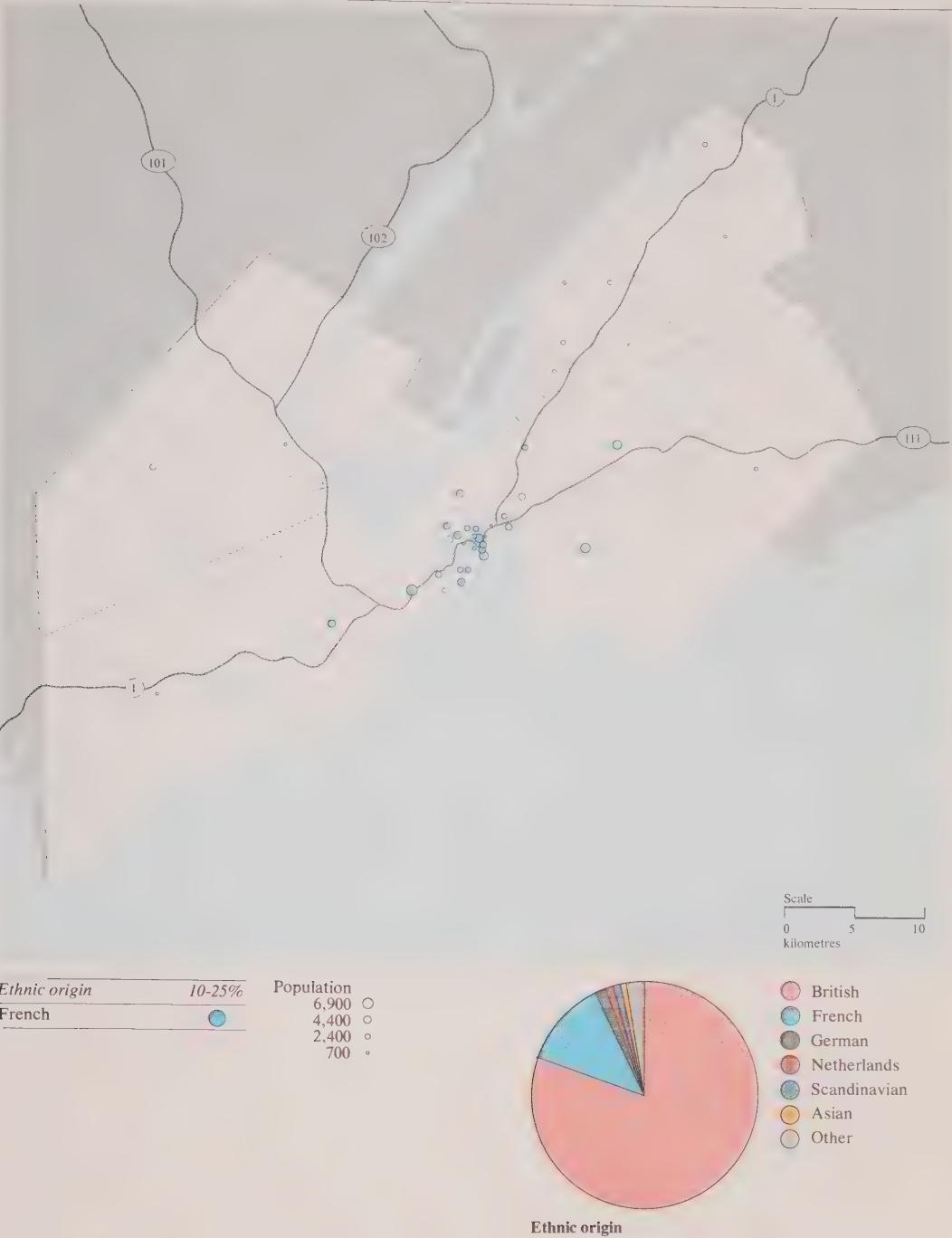
Ethnic origin

Figure 5.14 Population of British ethnic origin, Québec CMA, 1971

Scale

0   5   10
kilometres

Ethnic origin	10-25	>25%
British	○	●

Population
14,900 ○
9,900 ○
5,900 ○
3,600 ○
1,500 ○

● British
● French
● German
○ Other
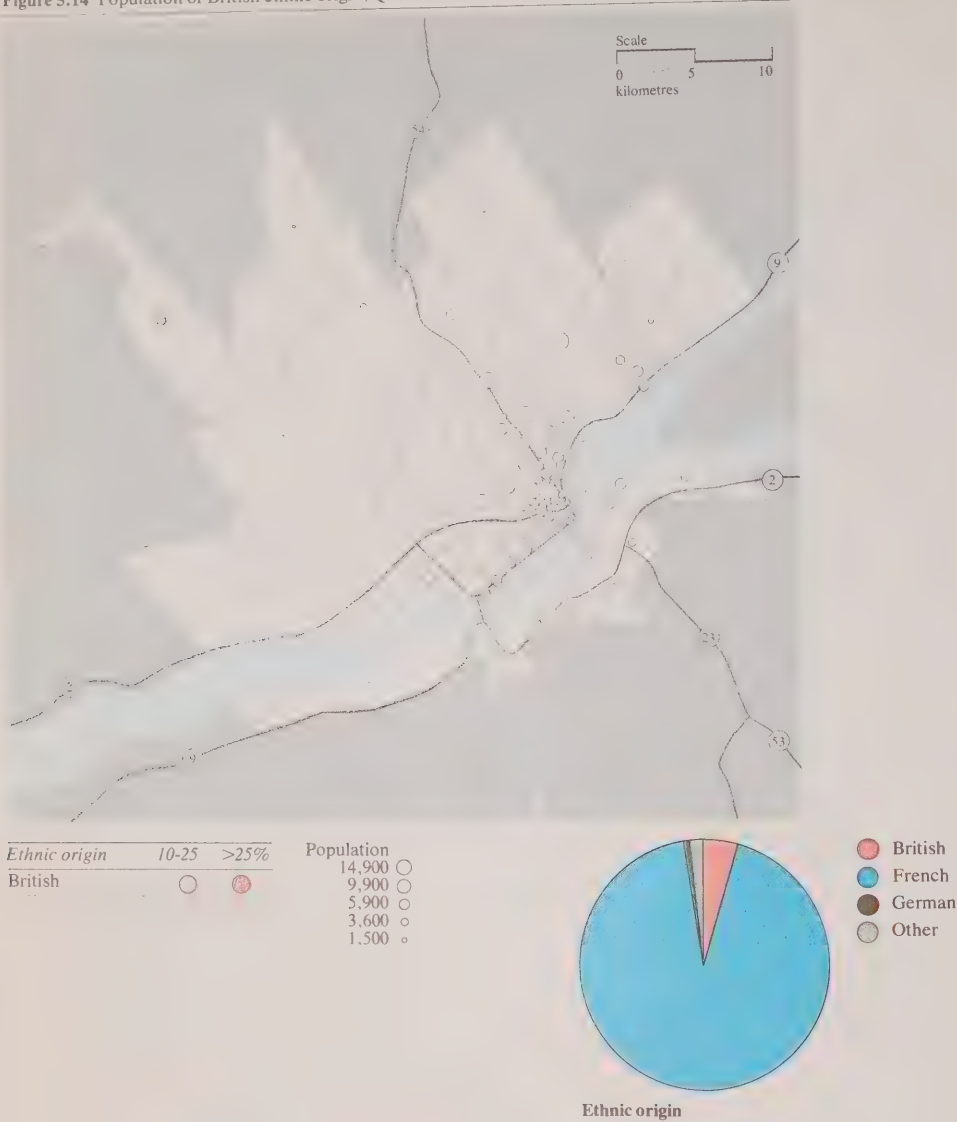
Ethnic origin

Figure 5.15 Dominant ethnic groups in Montréal CMA, 1971

Scale
0   5   10   15
kilometres
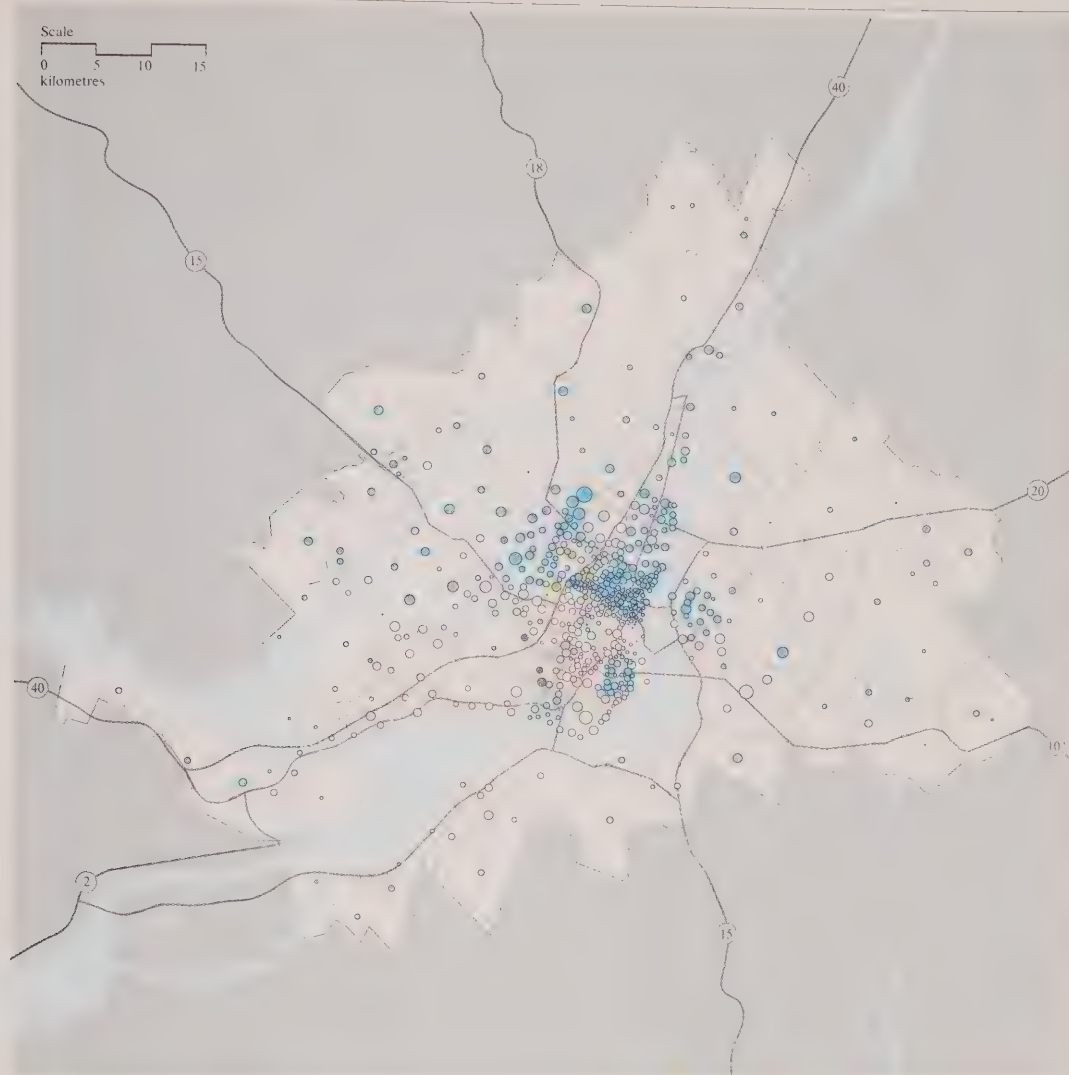
Ethnic origin	50-75	>75%
British		
French		
Italian		
Jewish		

Only census tracts where a single ethnic
group comprises at least 50% of the tract
population are coloured.

Population
20,700
9,900
6,800
5,300
4,000
2,500
1,200

- British
- French
- German
- Italian
- Jewish
- Polish
- Ukrainian
- Asian
- Other

Ethnic origin

95
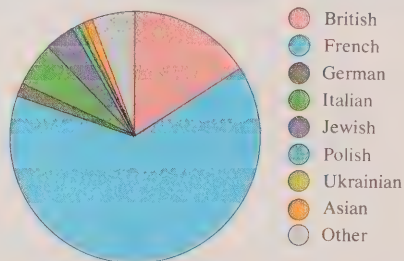
Figure 5.16 Ethnic minorities in Montréal CMA, 1971

Ethnic origin	10-25	>25%	Population	
Asian	○	○	20,700	○
Italian	○	○	9,900	○
Jewish	○	○	6,800	○
			5,300	○
			4,000	○
			2,500	○
			1,200	○

- British
- French
- German
- Italian
- Jewish
- Polish
- Ukrainian
- Asian
- Other
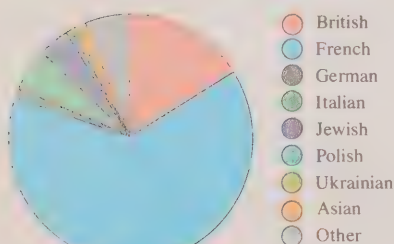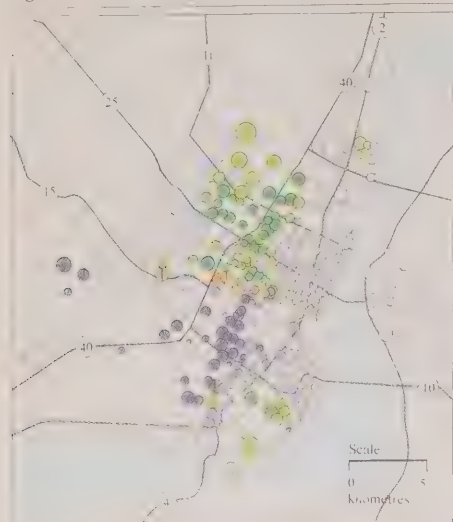
Ethnic origin

The series of ethnic maps are shown in Figures 5.13 to 5.33, arranged from east to west across the country.

Because of the ethnic homogeneity of St. John's, no ethnic map of that metropolitan area is included. In Halifax, the French were the only ethnic minority to exceed 10 percent of the population in any census tract. Because the French in Halifax are so highly assimilated in terms of language, however, no ethnic map of Halifax is included. The language retention rate of the French in Saint John, on the other hand, was high enough to justify the inclusion of Figure 5.13. The French in Saint John were quite evenly distributed – their segregation index was only .163 – although they were more common in the city of Saint John than in the outlying areas.

The only ethnic minority mapped in Québec City is the British, who are quite highly segregated (Figure 5.14). People of British ethnic origin exceeded 10 percent only in a string of high-income tracts between the city wall and the Québec Bridge, in St-Gabriel-de-Valcartier with its military base, and in nearby Shannon with its Irish heritage.

The high ethnic segregation indices in Montréal are translated into maps showing very sharp boundaries and intense concentrations of ethnic groups (Figures 5.15 and 5.16). Most census tracts had over half their population in a single ethnic group, whether British, French, Italian or Jewish. The sectoral pattern of ethnic groups is very clear. The British sector extends west through Westmount to the western end of Montréal Island. Isolated pockets in which more than half the population was of British ethnic origin in 1971 also occurred in Greenfield Park and Otterburn Park on the south shore. The Jewish sector lies north of the British sector, and extends across the river into the city of Laval. The Italian sector extends from the immigrant reception corridor along St. Laurent Boulevard into St-Léonard. In most areas not dominated by the British, Jews or Italians, the majority of the population were of French ethnic origin, including many tracts which were more than 90 percent French.

In the Ottawa-Hull CMA, which is also highly segregated, the Ottawa River is an important cultural boundary, but the French dominated in the Vanier and Lower Town neighbourhoods on the Ontario side (Figure 5.17). On the Québec side West Hull had a majority of British and Lucerne had approximately equal numbers of people with British and French ethnic origin, but elsewhere the French were in the majority. An area north of Dow's Lake had a significant Italian minority and two inner tracts were more than 10 percent Asian. In Ottawa-Hull, as in Montréal, the French areas were much more intensely French than the British areas were

Figure 5.17 Ethnic groups in Ottawa–Hull CMA, 1971

Ethnic origin	10-25	>25	50-75	>75%
British		○		●
French		○		●
Italian	●		●	
Asian	●			

Population
20,300
9,800
6,700
4,700
2,500

Ethnic origin

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other

Figure 5.18 Dominant ethnic groups in Toronto CMA, 1971

Ethnic origin	50-75	>75%
Asian		
British		
Italian		
Jewish		

Only census tracts where a single ethnic group comprises at least 50% of the tract population are coloured.

Population
20,500
16,200
10,400
7,800
5,700
4,000
1,900
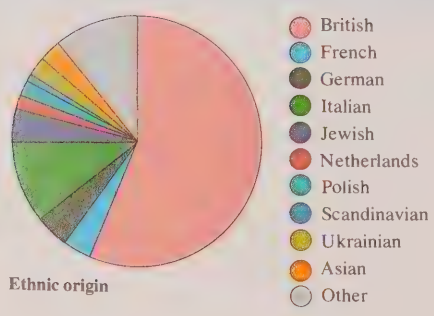
Ethnic origin

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other

Ethnic origin	10-25	>25%
Asian		
Italian		
Jewish		

Population
20,500
16,200
10,400
7,800
5,700
4,000
1,900
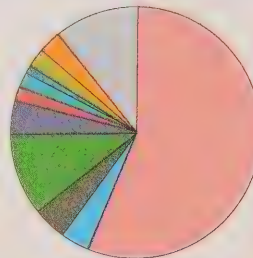
British
French
German
Italian
Jewish
Netherlands
Polish
Scandinavian
Ukrainian
Asian
Other

Ethnic origin

99

British. Only the three western peripheral townships and one tract in the west end of Ottawa were over 75 percent British.

Toronto is also sharply divided along ethnic lines. Cultural worlds are separated by only a few blocks (Figures 5.18, 5.19 and 5.20). The northwestern Italian sector, the Jewish axis along Bathurst Street, Chinatown and the East European areas surrounding High Park make distinct impressions on Toronto residents and the casual observer alike. The very WASP neighbourhoods such as Rosedale, Leaside and the Beaches stand out for their immunity from the waves of non-British immigrants which have arrived on the Toronto scene. Only one census tract beyond the Metropolitan Toronto boundary was less than 50 percent British in 1971. The exception was an Italian tract in Oakville. Italians were also found in a few tracts in Mississauga in numbers exceeding the 10 percent threshold.

Nowhere in Toronto did the French exceed 25 percent of a tract's population, but the 10 percent threshold was passed in a few census tracts east of the downtown area which have long been the home of Toronto's small French population.

Toronto's Jews have virtually abandoned their traditional neighbourhoods west of Spadina Avenue near Kensington Market. By 1971, most of the Jewish census tracts were located along Bathurst Street north of the C.P.R. and along Bayview Avenue.

Hamilton's ethnic neighbourhoods are primarily Italian (Figure 5.21). The most Italian census tracts are found along Barton Street, but moderately Italian tracts also occur elsewhere in the city, including a string of recently developed tracts well back from the moun-

Figure 5.20 Population of French, German, Polish and Ukrainian ethnic origin, Toronto CMA, 1971

Ethnic origin	10-25	>25%
French		
German		
Polish		
Ukrainian		

Population	
20,500	
16,200	
10,400	
7,800	
5,700	
4,000	
1,900	

Ethnic origin

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other

Figure 5.21 Ethnic minorities in Hamilton CMA, 1971

Ethnic origin	10-25	>25%
French	○	
German	○	
Italian	○	○
Jewish	○	
Polish	○	

Population
19,100 ○
16,800 ○
7,500 ○
4,800 ○
2,800 ○

Ethnic origin

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other
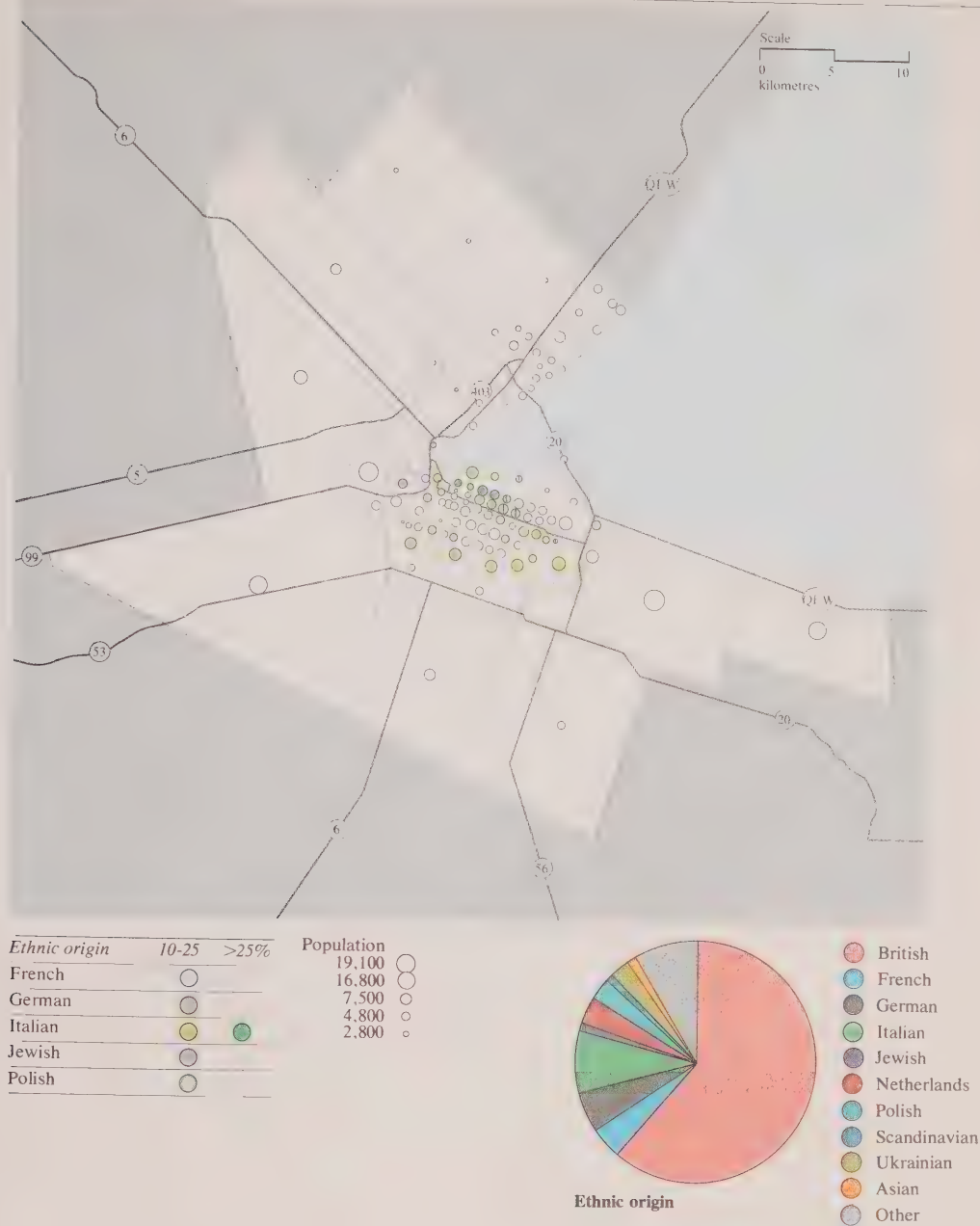
Figure 5.22 Ethnic minorities in St. Catharines – Niagara CMA, 1971

Ethnic origin	10-25	>25%
French	○	◉
German	◉	
Italian	◉	◉
Polish	○	
Ukrainian	○	

Population
23,000 ◯
16,900 ◯
7,200 ○
2,800 ○

Ethnic origin

- British
- French
- German
- Italian
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other
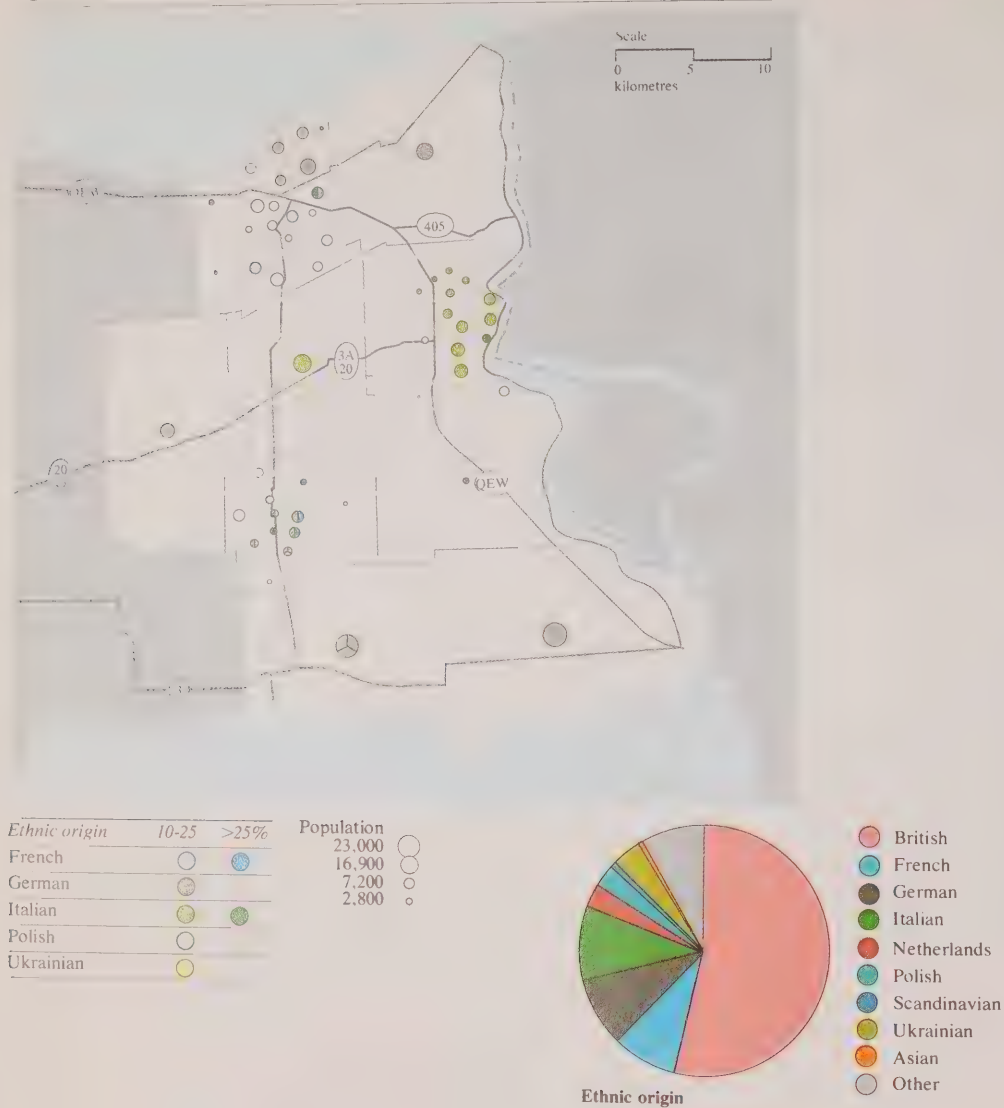
tain brow. No tracts outside the limits of the city of
Hamilton were more than 10 percent Italian. Hamilton's
Polish community overlaps the eastern end of the Bar-
ton Street Italian areas. Only one tract in Hamilton was
more than 10 percent Jewish—an area adjacent to
McMaster University. A single rather sparsely popu-
lated tract in Burlington was more than 10 percent
German.

The St. Catharines-Niagara CMA is really a
composite of three medium-sized cities, St. Catharines,
Niagara Falls and Welland, and a number of smaller
cities and towns. The ethnic map of the area reflects this
fact (Figure 5.22). The French areas are found mainly in
Welland and St. Catharines, the Italian areas mainly in
Welland-Niagara Falls, and the German areas mainly in
St. Catharines and the smaller towns. The French,
Germans and Italians all surpassed 10 percent in Port
Colborne. The ethnic map of St. Catharines-Niagara is
a composite of the historical ethnic pattern inherited
from early settlement of the area and the pattern of
new ethnic groups which have modified and reinforced
the ethnic differences among the components of the
metropolitan area.

Kitchener is the only metropolitan area in
Canada where a non-British non-French ethnic minority
exceeded one-quarter of the population in 1971.
Kitchener's German heritage derives from its original
settlement in the early nineteenth century by German
immigrants from Pennsylvania, but subsequent waves
of Germans, including postwar immigrants, have
helped to maintain its German character. Like St.
Catharines-Niagara, the Kitchener CMA is a collection
of cities and towns which have until recent times been
quite independent. The ethnic map of the metropolitan
area shows the absence of Germans from Galt, the
heavy German concentration in Kitchener, Waterloo
and Waterloo township, and the moderately German
population of Hespeler, Preston, Ayr and North Dum-
fries township (Figure 5.23). A single tract in Kitchener
was also more than 10 percent Polish.

London, the most British metropolitan area
outside of the Atlantic provinces and Victoria, had no
census tracts where more than 10 percent of the popu-
lation belonged to an unassimilated ethnic minority.
The rural township of Nissouri West was more than 10
percent Dutch, but the Dutch language retention rate
was not high enough to justify calling the area a Dutch
neighbourhood.

Figure 5.23 Ethnic minorities in Kitchener CMA, 1971

Scale
0   5   10
kilometres

Ethnic origin	10-25	>25%	Population	
German	●	●	10,300	○
Polish	○		8,400	○
			5,300	○
			2,300	○
			700	○

Ethnic origin

● British
● French
● German
● Italian
● Jewish
● Netherlands
● Polish
● Scandinavian
● Ukrainian
● Asian
○ Other
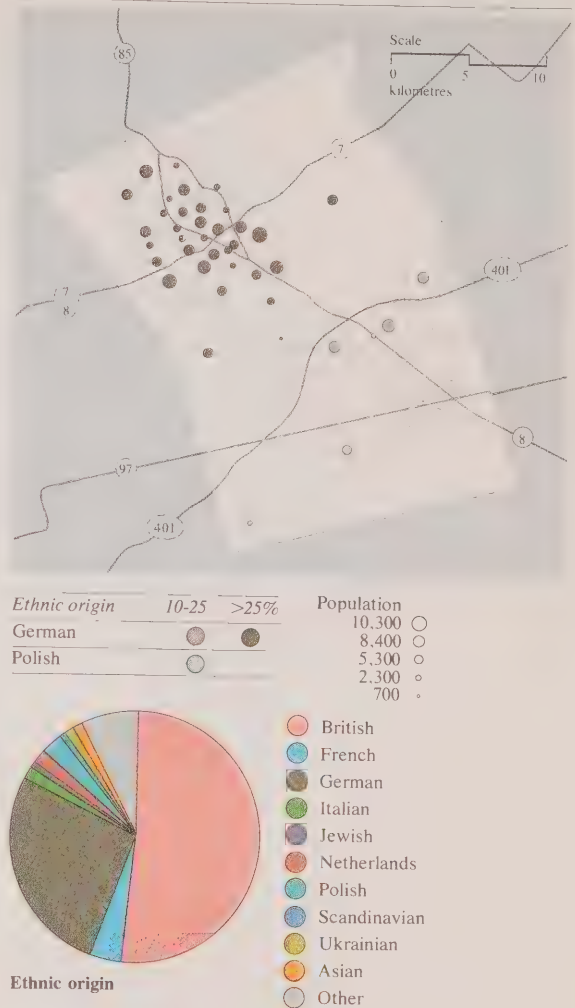
Figure 5.24 Ethnic minorities in Windsor CMA, 1971

Scale

0   5   10
kilometres

Ethnic origin	10-25	>25%
Asian	○	
French	○	◉
German	◎	
Italian	○	◉

Population
9,200 ○
7,500 ○
4,600 ○
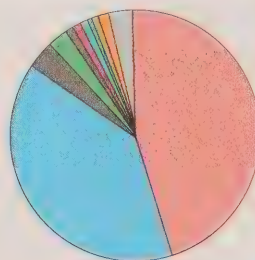2,300 ∘
800 ∘

Ethnic origin

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other

Figure 5.25 Ethnic groups in Sudbury CMA, 1971

Ethnic origin	10-25	50->25 75%
British		🔴
French		🔵
Italian	🟡	🟢

Population
17,800 ⚪
7,200 ○
3,100 ○

🔴 British
🔵 French
⚫ German
🟢 Italian
🔴 Netherlands
🟢 Polish
🔵 Scandinavian
🟡 Ukrainian
🟠 Asian
⚪ Other
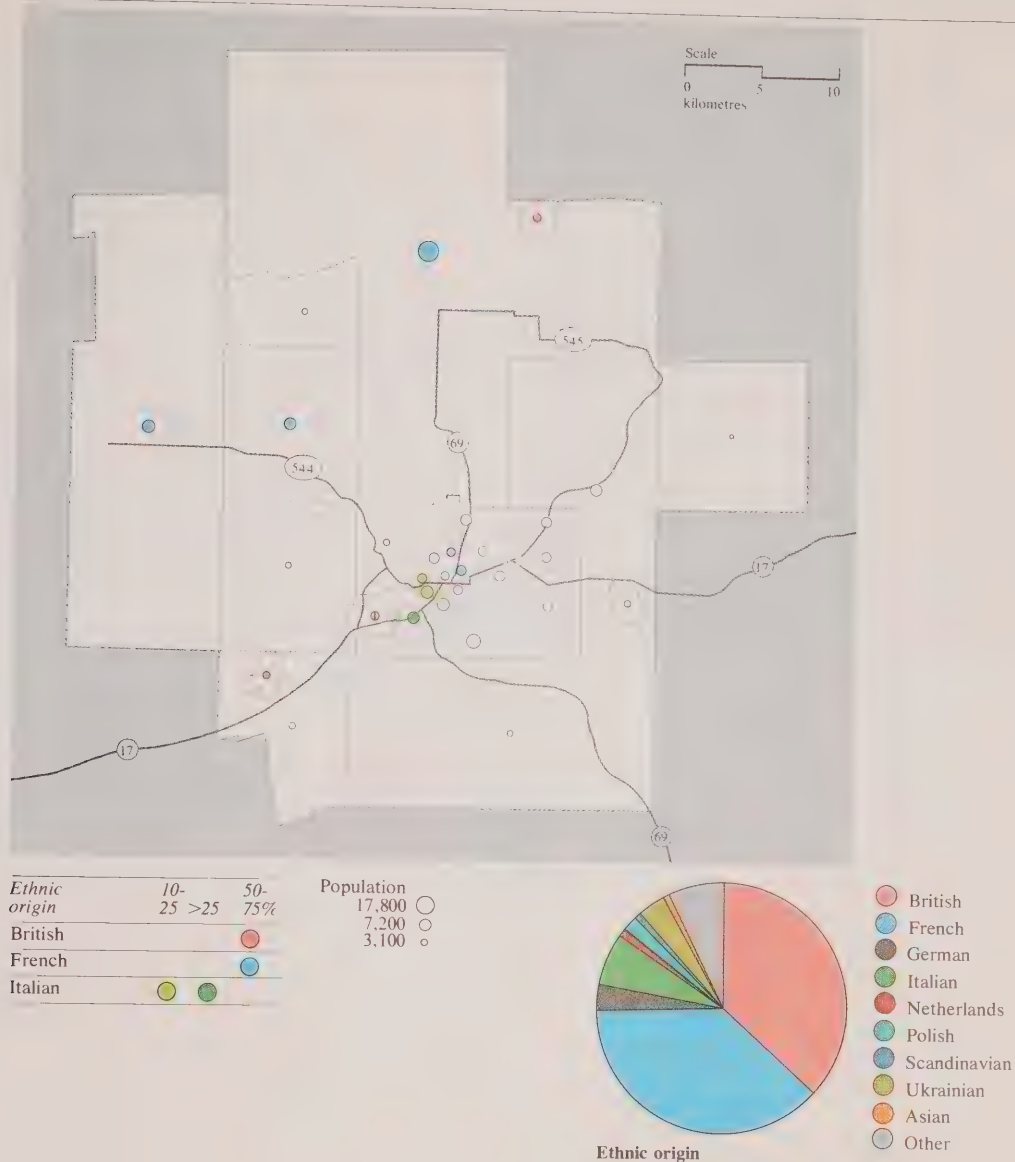
Ethnic origin

Figure 5.26 Ethnic minorities in Thunder Bay CMA, 1971

Ethnic origin	10-25	>25%
Italian		
Ukrainian		

Population
7,400
5,300
1,800
1,100

- British
- French
- German
- Italian
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other

Ethnic origin

Ethnic origin	10-25	>25%
Asian		
German		
Jewish		

Population
12,500
10,100
6,900
3,900
1,200

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other
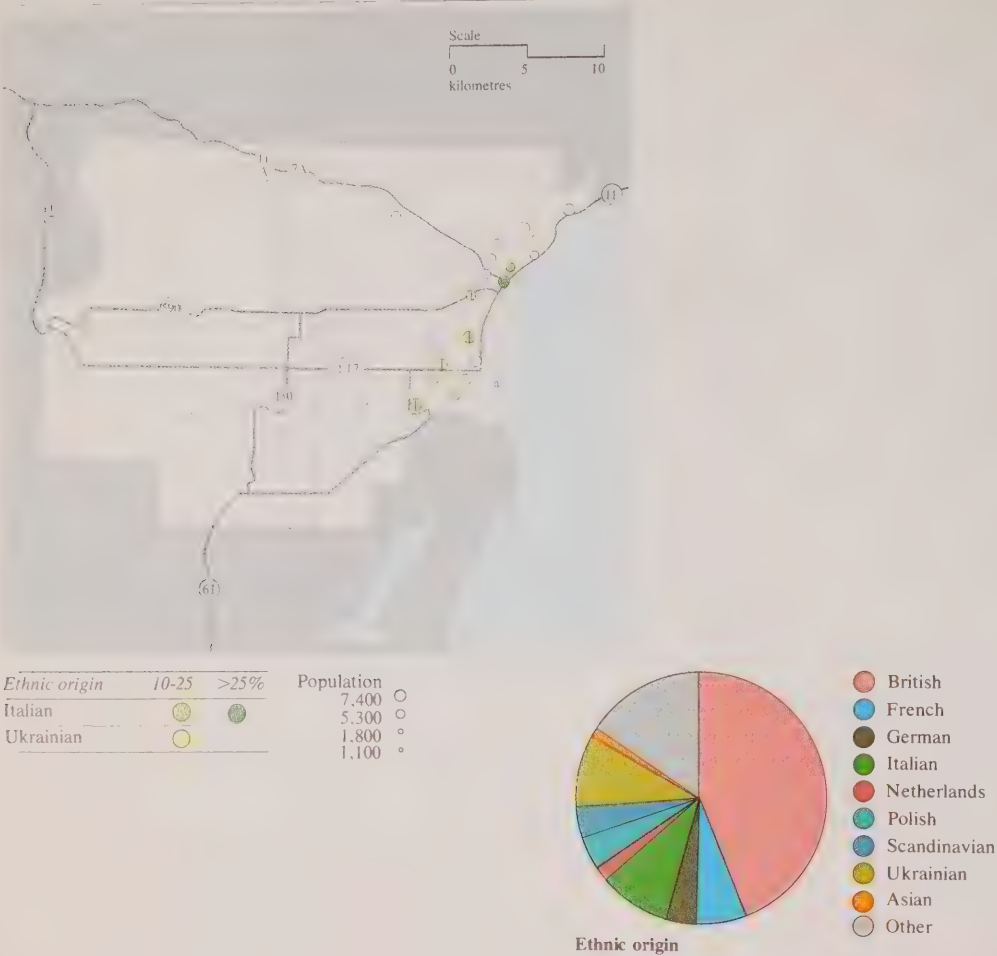
Ethnic origin

Figure 5.28 Population of French, Polish and Ukrainian ethnic origin, Winnipeg CMA, 1971

Ethnic origin	10-25	>25%
French	○	◉
Polish	○	
Ukrainian	○	◉

Population
12,500 ○
10,100 ○
6,900 ○
3,900 ○
1,200 ○

Ethnic origin

● British
● French
● German
● Italian
● Jewish
● Netherlands
● Polish
● Scandinavian
● Ukrainian
● Asian
● Other

The deep French roots of the Windsor area are reflected in the ethnic map for the Windsor CMA (Figure 5.24). Most of Windsor's census tracts were over 10 percent French in 1971. Windsor also has an Italian quarter southeast of downtown, and a small Chinatown west of downtown. One tract in Sandwich West township was moderately German in 1971.

Few census tracts in Sudbury were dominated by a single ethnic group in 1971, even though the level of ethnic segregation was high for a city of that size (Figure 5.25). The British and French each accounted for 37 percent of the CMA's population. Copper Cliff, Lively, Capreol and Falconbridge townships were predominantly British, while the townships of Balfour, Rayside and Valley East as well as two tracts in the north end of the city of Sudbury were over 50 percent French. The west end of the city and the town of Copper Cliff housed Sudbury's Italian minority.

Thunder Bay had about equal numbers of Italians and Ukrainians, each comprising nearly 10 percent of the population. The most Italian tract was in the former city of Port Arthur, but several tracts in the Fort William section were also moderately Italian (Figure 5.26). Ukrainians, on the other hand, lived mainly in the former city of Fort William.

Winnipeg has many ethnic minorities which are so segregated that they could not all be shown on a single map. Figure 5.27 shows the Asians, Germans and Jews; and Figure 5.28 the French, Polish and Ukrainians.

The north end of Winnipeg has always been the immigrant reception area for Germans, Ukrainians, Poles and Jews. Even in 1971, when most of the population belonging to these groups was Canadian-born, the Ukrainians, Poles and Jews were still over represented in the north end. The Ukrainians had also spread into East and West Kildonan and Transcona. The Germans were most numerous in East Kildonan, but were spread more evenly across the city than most groups. Jews were found in two clusters, one in their traditional area in the north end (including West Kildonan) and the other in the affluent Tuxedo and adjacent River Heights neighbourhoods (census tracts 5, 6 and 510).

The French settled in St. Boniface more than a century ago, and in 1971 were still highly concentrated in that area. Secondary clusters of French also appeared in Fort Garry, Transcona, Brooklands and a few census tracts in the inner city of Winnipeg.

Figure 5.29 Population of Ukrainian ethnic origin, Saskatoon CMA, 1971

Ethnic origin	10-25	>25%
Ukrainian		

Population
13,000
8,000
3,900

Ethnic origin

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other

Figure 5.30 Ethnic minorities in Edmonton CMA, 1971
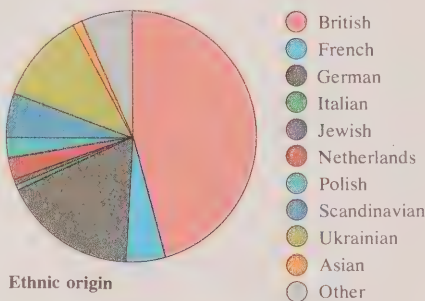
Figure 5.30 Ethnic minorities in Edmonton CMA, 1971
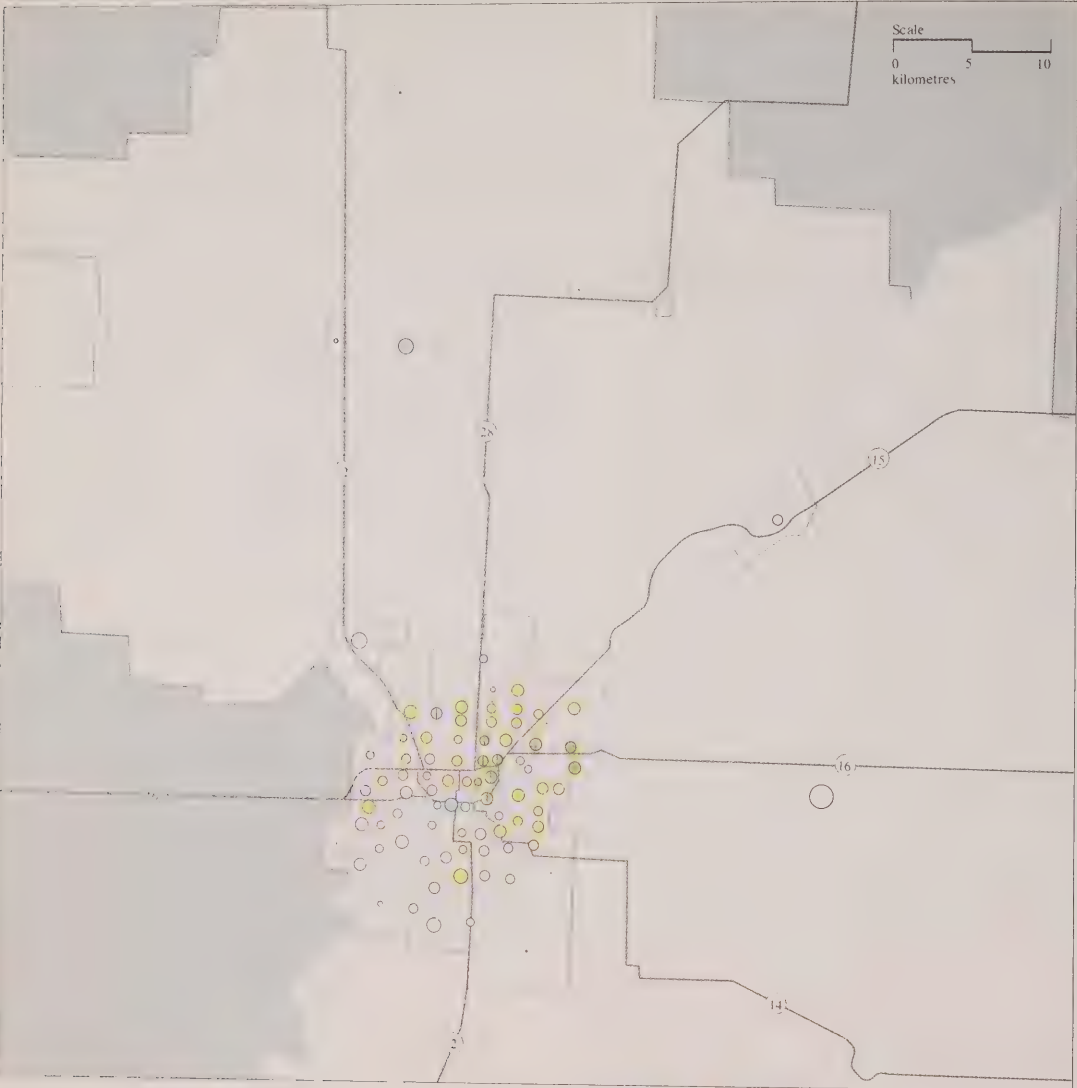
Ethnic origin	10-25	>25%
Asian	○	○
French	○	○
Italian	○	○
Ukrainian	○	○

Population	
25,700	○
8,300	○
4,900	○
800	°
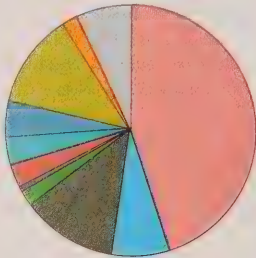
Ethnic origin

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other

The tract lying northwest of Portage and Main was the only one in Winnipeg which was more than 10 percent Asian ethnic origin in 1971.

More than 10 percent of the population in every census tract in Regina was of German ethnic origin, and several tracts were also more than 10 percent Ukrainian, but neither of these groups had retained its ancestral language in sufficient numbers to justify an ethnic map for Regina. Since one-fifth of Saskatoon's Ukrainians spoke Ukrainian at home in 1971, however, Figure 5.29 was prepared to show their distribution.

Most census tracts in Edmonton were more than 10 percent Ukrainian in 1971, since 13 percent of the population of Edmonton CMA were of Ukrainian origin. Nevertheless, Edmonton's Ukrainians were not evenly distributed across the city (Figure 5.30). They comprised less than 10 percent of the population throughout the southwest sector and in a large portion of the southeast. Three tracts in the northeast were over 25 percent Ukrainian. Only 1.8 percent of Edmonton's population was of Italian ethnic origin in 1971, but their level of segregation was such that four census tracts northeast of the central business district were more than 10 percent Italian. One inner city census tract was more than 10 percent Asian. Edmonton also has a sizable French minority. Although many live in the surrounding villages and rural areas, the French also comprised over 10 percent of the population in a few tracts within the city.

Edmonton had as many Germans as Ukrainians in 1971, but the Germans were almost totally assimilated into English-speaking society. They were therefore excluded from Figure 5.30.

The advanced stage of integration of most of Calgary's ethnic minorities leaves only four ethnic census tracts in Figure 5.31—two Italian, one Asian and one Jewish.

Of all the CMAs, Vancouver had the largest Asian percentage in 1971, and the extensive Asian areas shown on Figure 5.32 are the result of this fact. One census tract (no. 57) had an absolute majority of Asian population (53 percent)—one of only two such tracts in Canada. Vancouver's Chinatown is the largest in the country. Census tract 142 at the mouth of the Fraser is the Japanese fishing village of Steveston. The Italian population in Vancouver overlaps the eastern edge of Chinatown. Only 1 percent of Vancouver's 1971 population was Jewish, but two contiguous census tracts were more than 10 percent Jewish.

Figure 5.31 Ethnic minorities in Calgary CMA, 1971

Ethnic origin	10-25%
Asian	●
Italian	●
Jewish	●

Population
11,100 ○
6,700 ○
5,200 ○
3,700 ○

Ethnic origin

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other

Figure 5.32 Ethnic minorities in Vancouver CMA, 1971

Figure 5.32 Ethnic minorities in Vancouver CMA, 1971

Ethnic origin	10-25	>25%	Population	
Asian	○	○	24,300	◯
Italian	○	○	10,600	○
Jewish	○		6,600	○
			4,400	○
			2,200	○

Ethnic origin

- British
- French
- German
- Italian
- Jewish
- Netherlands
- Polish
- Scandinavian
- Ukrainian
- Asian
- Other
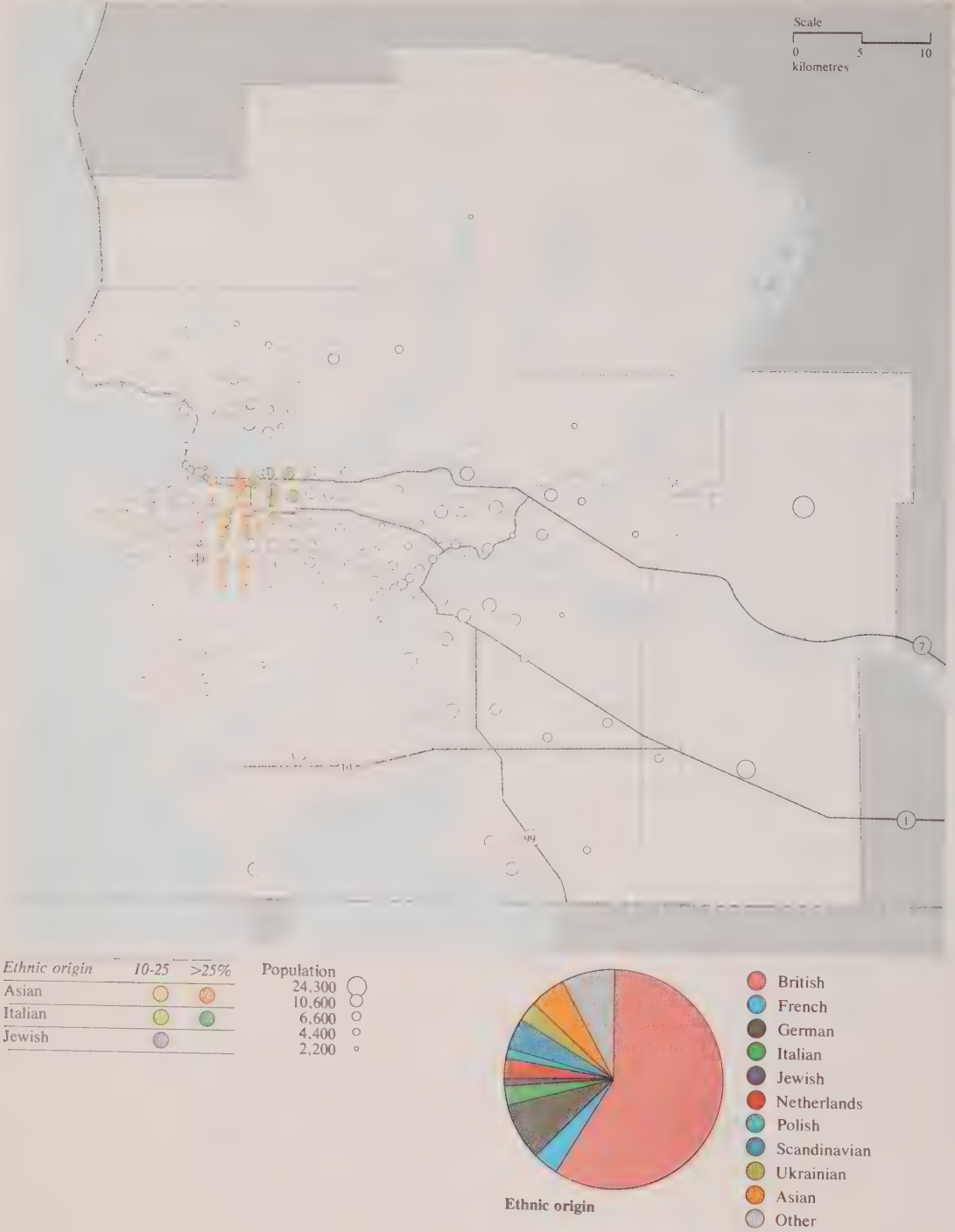
Most of Victoria's ethnic minorities are well assimilated in terms of residence and language, but more than half of the Asian minority (largely Chinese) still spoke an Asian language at home in 1971. Three inner city census tracts were more than 10 percent Asian (Figure 5.33).

Although the ethnic pattern of each metropolitan area in Canada is unique, a few generalizations can be made on the basis of this overview. First, the particular types of ethnic neighbourhoods found in a city depend upon the ethnic composition of the city and the stage of assimilation of each group into the host society. Italian neighbourhoods are much more common than German ones, for example, because Italians are less assimilated and more segregated.

History plays a very important role in explaining the present ethnic patterns in cities. The location of initial settlement of an ethnic group has a long-lasting effect on the evolving ethnic map of the city. The pace of social mobility of each ethnic group also influences the evolution of its spatial pattern.

Large ethnic minorities usually display a sectoral pattern, often occupying a wedge which extends from the inner city to the metropolitan fringe. Smaller ethnic groups usually occupy a small cluster of contiguous census tracts in a fairly old part of the city. Asian neighbourhoods (usually Chinatowns) are almost always very close to the central business district.

The ethnic pattern of a city also depends upon the relationships among the ethnic dimension, the life cycle and the economic dimension—a topic pursued in the following chapter.

5.6 An index of ethnic diversity

Ordinarily, when thinking of the ethnic pattern of a city, one has in mind the distribution of each ethnic group in relation to each other and to other elements in the urban landscape. At a further level of abstraction, however, one can think in terms of ethnic diversity. A neighbourhood may be ethnically homogeneous (i.e., almost all its population belongs to the same ethnic group) or ethnically diverse (i.e., a large number of ethnic groups are represented in approximately equal numbers). Thus the level of ethnic diversity in a neighbourhood depends upon the relative numbers of people with each ethnic origin.

The measure of ethnic diversity presented in Volume III for each census tract in Metropolitan Canada is the same as the one provided for each urban area in Volume I, Chapter 6. The measure is also shown in Table 5.5 for each CMA. Its formula is as follows:

Index of ethnic diversity $= 1 - \Sigma \, p_i^2$

where p_i is the proportion of a census tract's population in the ith ethnic group.

Figure 5.33 Population of Asian ethnic origin, Victoria CMA, 1971

Ethnic origin	10-25%	Population	
Asian	●	22,800	◯
		6,000	○
		3,100	∘

British
French
German
Italian
Netherlands
Polish
Scandinavian
Ukrainian
Asian
Other

Ethnic origin

One first calculates the proportion of the tract's population in each ethnic group, squares each of these proportions, then sums these squares, and subtracts the total from 1. The index has its minimum value of 0 when all the population has the same ethnic origin. The maximum value depends on the number of groups used in the calculation. Since 12 groups were used here, the maximum value is .92.

Figure 5.34 shows the frequency distribution of the 2,267 census tracts in Metropolitan Canada according to their ethnic diversity index. The distribution is negatively skewed, i.e., it shows a longer tail of census tracts with values far below the mean value of .51. The median ethnic diversity index was .56. One-quarter of the tracts had an index above .67, and one quarter had an index below .38. The maximum was .85, while the minimum was 0.

In order to obtain a feeling for how the index behaves, the ethnic composition and ethnic diversity index are presented below for five census tracts representative of the extremes of the distribution and the quartile break points:

These neighbourhoods are known locally as Wedgewood Park, Lower Town East, Point St. Charles, Don Vale and Macauley.

Volume III includes a map of ethnic diversity for each CMA. Tracts were ranked according to their ethnic diversity index and the ranked listing was divided into four categories with equal numbers of tracts in each quartile. Figure 5.35 is included as an example of this series of maps. This map should be compared with Figure 5.17 in order to see how the pattern of ethnic diversity relates to the pattern of particular ethnic groups in Ottawa-Hull. Ottawa-Hull had census tracts in each quartile of ethnic diversity. All but three of the tracts in the Québec portion of the CMA were in the most homogeneous quartile. The mixed British and French origins in Aylmer, Lucerne and West Hull, however, gave these municipalities indices in the second and third quartiles. On the Ontario side, only the three predominantly French tracts and the most British rural part of Nepean township were in the most homogeneous quartile. Most tracts in the southeast quadrant of the city were moderately diverse (mainly British and French)

Ethnic Origin	St. John's Tract 180 (%)	Ottawa-Hull Tract 56 (%)	Montréal Tract 73 (%)	Toronto Tract 68 (%)	Edmonton Tract 44 (%)
Asian	0.0	0.4	0.0	11.7	6.4
British	100.0	14.7	24.5	52.2	26.5
French	0.0	77.2	61.0	13.5	5.8
German	0.0	1.4	0.6	1.4	8.1
Italian	0.0	1.7	2.2	2.8	13.7
Jewish	0.0	1.4	0.0	0.6	0.1
Netherlands	0.0	0.2	0.3	0.3	2.0
Polish	0.0	0.2	4.6	0.7	4.8
Russian	0.0	0.0	0.0	0.3	0.3
Scandinavian	0.0	0.2	0.0	0.6	2.5
Ukrainian	0.0	0.2	4.6	1.0	15.6
Other	0.0	2.3	2.2	15.3	14.4
Ethnic diversity index	**.00**	**.38**	**.56**	**.67**	**.85**

Table 5.13 Ethnic diversity indices, Census Metropolitan Areas, 1971*

Census Metropolitan Area	Ethnic diversity index	Mean ethnic diversity index of census tracts	Standard deviation of ethnic diversity index of census tracts
Winnipeg (most diverse)	.77	.72	.10
Thunder Bay	.76	.73	.06
Edmonton	.75	.72	.09
Saskatoon	.74	.73	.05
Regina	.72	.70	.06
Sudbury	.71	.66	.10
Windsor	.71	.68	.06
St. Catharines-Niagara	.68	.64	.08
Calgary	.66	.65	.06
Kitchener	.66	.63	.08
Toronto	.65	.56	.11
Ottawa-Hull	.64	.48	.16
Vancouver	.64	.60	.11
Hamilton	.60	.58	.10
Montréal	.55	.40	.21
London	.46	.45	.08
Victoria	.43	.41	.10
Halifax	.38	.38	.05
Saint John	.34	.32	.08
Québec	.13	.12	.10
St. John's (most homogeneous)	.08	.08	.05
Metropolitan Canada		.51	.20

* For definitions, see Table 5.5. Metropolitan areas are ranked according to the ethnic diversity index of their population shown in column 1.

and most tracts in the southwest were moderately homogeneous (mainly British). The most diverse tracts were all in the inner city, including the Italian neighbourhoods and Sandy Hill.

The series of ethnic diversity maps in Volume III show less consistency in their spatial patterns than the maps of family life-cycle indices and average family income. The patterns are by no means random, but they are neither consistently concentric nor sectoral, and in some cities, e.g., Toronto, there are both concentric and sectoral elements to the pattern.

Differences between metropolitan areas in the range of values found are much more apparent in the series of ethnic diversity maps than in the series of family life-cycle and family income maps. Although *all* metropolitan areas have census tracts in all quartiles of the family life-cycle index and average family income, *few* metropolitan areas have census tracts in all quartiles of the ethnic diversity index. Table 5.13 provides additional evidence that intermetropolitan differences in ethnic diversity are more pronounced than intrametropolitan differences.

The first two columns of Table 5.13 also show that, in general, the metropolitan areas whose populations as a whole are ethnically diverse are the metropolitan areas whose census tracts have an ethnically diverse population. Census tracts in Montréal, Toronto and Ottawa-Hull, however, tend to be substantially less diverse than the entire population of these metropolitan areas, since their ethnic groups are highly segregated into fairly homogeneous neighbourhoods. Census tracts in Montréal and Ottawa-Hull also differ most in their ethnic diversity.

5.7   Conclusion

The legacy of immigration in Canada is an ethnically diverse metropolitan population with a fairly high degree of ethnic segregation. The fact that Canada has encouraged a high level of postwar immigration, relative to her population size, has had important consequences not only for the size of her metropolitan areas but also for their cultural mosaic.

One of the most salient characteristics which differentiates metropolitan areas in Canada is the ethnic origin of their population. These metropolitan differences in turn are translated into ethnic differences in metropolitan neighbourhoods. The timing of immigrant arrivals from each source has also affected the types and numbers of ethnic neighbourhoods in each metropolitan area. Differences in the origins and destinations of the older and the newer waves of immigrants have also influenced the evolution of ethnic neighbourhoods, for without continuing replenishment of an ethnic group by foreign arrivals, the group is slowly assimilated into the host society.

In addition to metropolitan differences arising from nineteenth- and twentieth-century immigration patterns, Canada's French- and English-speaking heritage has produced a further important dimension of metropolitan and neighbourhood differences.

This chapter has demonstrated that immigration patterns, language retention, ethnic residential segregation and the types of ethnic neighbourhoods found in metropolitan areas are all interrelated. In a nation where one-third of the population are first- or second-generation immigrants from a wide variety of cultural hearths, the ethnic dimension of neighbourhood differentiation is necessarily strong. But in a nation where regions and cities are themselves highly differentiated according to their ethnic heritage, the significance and spatial expression of ethnic differences also vary a great deal. Thus, ethnic neighbourhoods are one of the best examples of the continuing importance of the regional dimension in Canada.

Figure 5.34 Frequency distribution of census tracts by ethnic diversity index, Metropolitan Canada, 1971

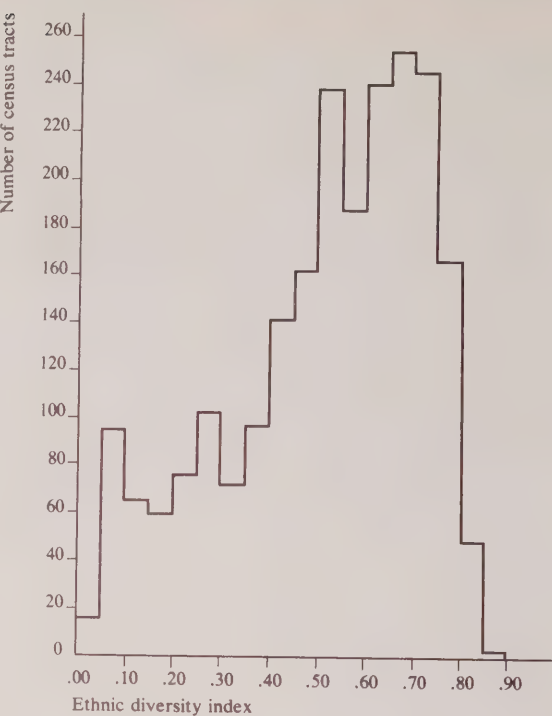Figure 5.35 Ethnic diversity index, Ottawa–Hull CMA, 1971

Ethnic diversity index		Population	
.021-.188	⬤	20,300	◯
.189-.377	⬤	9,800	◯
.378-.565	⬤	6,700	○
.566-.754	⬤	4,700	○
		2,500	∘

Table A5.1 Ethnic origin by birthplace and period of immigration, Census Metropolitan Areas, 1971*

Census Metropolitan Area	Ethnic origin	Born in Canada (%)	Immigrated (%) Before 1946	1946-1960	1961-1971†	Total (%)
Calgary	Asian	0.81	0.13	0.29	0.73	1.96
	British Isles	47.41	3.37	2.42	2.79	55.99
	French	3.75	0.09	0.08	0.16	4.08
	German	9.54	0.60	1.84	0.63	12.61
	Italian	1.17	0.06	0.64	0.56	2.43
	Jewish	0.64	0.12	0.08	0.08	0.92
	Netherlands	2.07	0.11	0.96	0.28	3.42
	Polish	1.34	0.14	0.25	0.11	1.84
	Scandinavian	3.95	0.47	0.37	0.17	4.96
	Ukrainian	3.49	0.25	0.17	0.03	3.94
	Other and Unknown	5.36	0.47	1.00	1.02	7.85
	Total	**79.52**	**5.81**	**8.10**	**6.57**	**100.00**
Chicoutimi-Jonquière	Asian	0.08	0.00	0.01	0.03	0.11
	British Isles	3.97	0.09	0.12	0.14	4.31
	French	93.30	0.17	0.14	0.32	93.93
	German	0.34	0.00	0.02	0.03	0.40
	Italian	0.15	0.01	0.03	0.01	0.20
	Jewish	0.01	0.00	0.00	0.00	0.01
	Netherlands	0.07	0.00	0.01	0.01	0.10
	Polish	0.04	0.00	0.03	0.01	0.09
	Scandinavian	0.18	0.00	0.00	0.01	0.19
	Ukrainian	0.07	0.01	0.02	0.00	0.09
	Other and Unknown	0.45	0.03	0.03	0.06	0.56
	Total	**98.64**	**0.32**	**0.41**	**0.41**	**100.00**
Edmonton	Asian	0.73	0.08	0.26	0.89	1.95
	British Isles	38.81	2.41	1.79	1.68	44.69
	French	6.88	0.16	0.07	0.10	7.21
	German	9.35	0.70	2.05	0.48	12.59
	Italian	0.82	0.05	0.51	0.44	1.82
	Jewish	0.41	0.08	0.06	0.04	0.59
	Netherlands	1.98	0.09	1.14	0.18	3.38
	Polish	2.58	0.33	0.35	0.16	3.42
	Scandinavian	3.94	0.40	0.26	0.10	4.69
	Ukrainian	11.12	1.03	0.41	0.07	12.63
	Other and Unknown	5.04	0.36	0.73	0.89	7.03
	Total	**81.67**	**5.68**	**7.62**	**5.03**	**100.00**

Table A5.1 (Continued)

Census Metropolitan Area	Ethnic origin	Born in Canada (%)	Immigrated (%) Before 1946	1946-1960	1961-1971†	Total (%)
Halifax	Asian	0.52	0.04	0.09	0.52	1.17
	British Isles	73.47	1.35	1.62	1.32	77.74
	French	8.26	0.07	0.05	0.09	8.46
	German	4.58	0.05	0.17	0.14	4.95
	Italian	0.35	0.02	0.10	0.16	0.65
	Jewish	0.47	0.09	0.05	0.07	0.68
	Netherlands	1.61	0.02	0.19	0.04	1.85
	Polish	0.27	0.01	0.05	0.03	0.36
	Scandinavian	0.54	0.04	0.04	0.06	0.69
	Ukrainian	0.32	0.01	0.01	0.00	0.35
	Other and Unknown	2.38	0.08	0.24	0.41	3.11
	Total	**92.77**	**1.79**	**2.62**	**2.83**	**100.00**
Hamilton	Asian	0.45	0.08	0.09	0.51	1.13
	British Isles	50.78	4.25	3.73	2.81	61.58
	French	3.95	0.05	0.04	0.08	4.12
	German	3.57	0.17	1.30	0.40	5.43
	Italian	3.90	0.36	2.30	1.53	8.09
	Jewish	0.61	0.14	0.11	0.07	0.92
	Netherlands	1.93	0.05	1.35	0.22	3.55
	Polish	1.74	0.36	0.68	0.24	3.02
	Scandinavian	0.48	0.05	0.12	0.04	0.68
	Ukrainian	2.03	0.32	0.48	0.05	2.89
	Other and Unknown	3.89	0.79	1.98	0.04	8.60
	Total	**73.33**	**6.61**	**12.17**	**7.89**	**100.00**
Kitchener	Asian	0.36	0.03	0.07	0.65	1.11
	British Isles	44.77	2.00	2.04	2.65	51.46
	French	4.14	0.03	0.04	0.08	4.29
	German	20.65	1.01	3.71	1.27	26.64
	Italian	0.67	0.03	0.28	0.31	1.29
	Jewish	0.34	0.05	0.07	0.09	0.55
	Netherlands	1.08	0.05	0.69	0.13	1.96
	Polish	1.89	0.25	0.47	0.20	2.81
	Scandinavian	0.35	0.03	0.07	0.07	0.52
	Ukrainian	1.05	0.13	0.21	0.02	1.42
	Other and Unknown	2.91	0.37	1.35	3.32	7.96
	Total	**78.22**	**3.97**	**9.00**	**8.81**	**100.00**
London	Asian	0.44	0.03	0.09	0.60	1.16
	British Isles	63.16	3.80	2.95	2.74	72.64
	French	3.26	0.05	0.06	0.08	3.45
	German	4.03	0.16	1.09	0.44	5.73
	Italian	1.18	0.08	0.56	0.59	2.40
	Jewish	0.41	0.07	0.08	0.08	0.64
	Netherlands	2.15	0.06	1.53	0.22	3.96
	Polish	0.88	0.12	0.51	0.14	1.66
	Scandinavian	0.58	0.07	0.12	0.07	0.84
	Ukrainian	0.76	0.08	0.28	0.06	1.17
	Other and Unknown	3.14	0.31	1.37	1.52	6.34
	Total	**79.99**	**4.83**	**8.64**	**6.53**	**100.00**

Census Metropolitan Area	Ethnic origin	Born in Canada (%)	Immigrated (%) Before 1946	1946-1960	1961-1971†	Total (%)
Montréal	Asian	0.43	0.05	0.13	0.72	1.33
	British Isles	13.21	1.08	0.85	0.85	15.98
	French	62.64	0.37	0.55	0.70	64.26
	German	0.71	0.08	0.43	0.17	1.40
	Italian	2.60	0.17	1.81	1.27	5.85
	Jewish	2.50	0.56	0.66	0.44	4.16
	Netherlands	0.17	0.01	0.11	0.04	0.33
	Polish	0.36	0.08	0.23	0.08	0.74
	Scandinavian	0.15	0.02	0.03	0.03	0.23
	Ukrainian	0.41	0.09	0.14	0.01	0.66
	Other and Unknown	2.01	0.24	1.08	1.72	5.05
	Total	**85.21**	**2.75**	**6.01**	**6.03**	**100.00**
Ottawa-Hull	Asian	0.55	0.05	0.23	0.70	1.53
	British Isles	39.45	1.65	2.15	1.65	44.90
	French	38.83	0.18	0.19	0.38	39.58
	German	2.25	0.07	0.61	0.24	3.18
	Italian	1.21	0.05	0.71	0.55	2.52
	Jewish	0.87	0.16	0.10	0.07	1.20
	Netherlands	0.75	0.02	0.39	0.08	1.24
	Polish	0.58	0.03	0.22	0.07	0.90
	Scandinavian	0.48	0.04	0.07	0.04	0.63
	Ukrainian	0.73	0.05	0.10	0.01	0.90
	Other and Unknown	1.78	0.09	0.66	0.91	3.44
	Total	**87.50**	**2.38**	**5.42**	**4.69**	**100.00**
Québec	Asian	0.10	0.01	0.04	0.08	0.23
	British Isles	4.08	0.09	0.10	0.10	4.37
	French	92.14	0.29	0.31	0.60	93.34
	German	0.36	0.00	0.05	0.05	0.46
	Italian	0.24	0.01	0.09	0.05	0.38
	Jewish	0.07	0.00	0.01	0.01	0.08
	Netherlands	0.04	0.00	0.02	0.01	0.07
	Polish	0.04	0.00	0.01	0.01	0.06
	Scandinavian	0.04	0.00	0.00	0.00	0.05
	Ukrainian	0.02	0.00	0.00	0.00	0.03
	Other and Unknown	0.64	0.02	0.10	0.17	0.93
	Total	**97.76**	**0.43**	**0.72**	**1.08**	**100.00**

Census Metropolitan Area	Ethnic origin	Born in Canada (%)	Immigrated (%) Before 1946	1946-1960	1961-1971†	Total (%)
Regina	Asian	0.61	0.08	0.22	0.59	1.50
	British Isles	41.78	2.84	0.93	0.95	46.49
	French	4.24	0.10	0.02	0.04	4.40
	German	18.52	1.55	1.45	0.25	21.77
	Italian	0.34	0.02	0.21	0.14	0.70
	Jewish	0.45	0.09	0.02	0.05	0.61
	Netherlands	1.16	0.06	0.28	0.04	1.55
	Polish	2.24	0.19	0.20	0.03	2.67
	Scandinavian	3.28	0.33	0.08	0.05	3.75
	Ukrainian	5.63	0.44	0.14	0.02	6.22
	Other and Unknown	8.64	0.75	0.51	0.41	10.32
	Total	**86.89**	**6.47**	**4.07**	**2.56**	**100.00**
St. Catharines-Niagara	Asian	0.29	0.06	0.05	0.24	0.65
	British Isles	45.83	3.66	2.47	1.98	53.95
	French	8.49	0.09	0.08	0.07	8.72
	German	6.41	0.59	1.55	0.40	8.95
	Italian	4.96	0.58	2.81	1.43	9.79
	Jewish	0.28	0.05	0.04	0.03	0.40
	Netherlands	1.75	0.07	1.06	0.13	3.02
	Polish	1.62	0.39	0.69	0.21	2.92
	Scandinavian	0.44	0.06	0.10	0.03	0.63
	Ukrainian	2.82	0.55	0.40	0.05	3.82
	Other and Unknown	4.17	1.27	1.12	0.58	7.15
	Total	**77.08**	**7.38**	**10.38**	**5.16**	**100.00**
St. John's	Asian	0.26	0.03	0.05	0.20	0.53
	British Isles	93.74	0.39	0.67	1.00	95.80
	French	1.09	0.00	0.02	0.03	1.15
	German	0.39	0.01	0.07	0.06	0.54
	Italian	0.07	0.00	0.01	0.01	0.10
	Jewish	0.14	0.00	0.01	0.02	0.17
	Netherlands	0.13	0.00	0.03	0.03	0.19
	Polish	0.04	0.00	0.00	0.02	0.07
	Scandinavian	0.30	0.00	0.02	0.04	0.36
	Ukrainian	0.05	0.00	0.00	0.00	0.05
	Other and Unknown	0.81	0.01	0.09	0.14	1.05
	Total	**97.04**	**0.45**	**0.96**	**1.54**	**100.00**
Saint John	Asian	0.49	0.02	0.02	0.19	0.71
	British Isles	77.07	1.71	0.80	0.71	80.28
	French	12.42	0.08	0.05	0.06	12.61
	German	1.23	0.02	0.12	0.11	1.48
	Italian	0.28	0.02	0.03	0.06	0.38
	Jewish	0.23	0.08	0.02	0.00	0.34
	Netherlands	0.93	0.02	0.12	0.00	1.08
	Polish	0.09	0.01	0.02	0.00	0.12
	Scandinavian	0.71	0.04	0.05	0.03	0.83
	Ukrainian	0.13	0.03	0.00	0.00	0.16
	Other and Unknown	1.57	0.07	0.15	0.22	2.01
	Total	**95.15**	**2.10**	**1.37**	**1.38**	**100.00**

Census Metropolitan Area	Ethnic origin	Born in Canada (%)	Immigrated (%) Before 1946	1946-1960	1961-1971†	Total (%)
Saskatoon	Asian	0.43	0.09	0.18	0.60	1.30
	British Isles	40.49	3.07	1.19	1.24	45.99
	French	4.79	0.18	0.05	0.05	5.06
	German	15.19	1.16	0.73	0.29	17.37
	Italian	0.29	0.04	0.09	0.14	0.56
	Jewish	0.29	0.08	0.05	0.05	0.46
	Netherlands	2.21	0.13	0.36	0.10	2.80
	Polish	2.18	0.26	0.11	0.06	2.60
	Scandinavian	4.83	0.62	0.11	0.13	5.69
	Ukrainian	10.13	0.95	0.26	0.04	11.37
	Other and Unknown	5.28	0.52	0.41	0.56	6.80
	Total	**86.10**	**7.09**	**3.54**	**3.27**	**100.00**
Sudbury	Asian	0.32	0.02	0.08	0.36	0.78
	British Isles	33.94	0.90	0.97	0.84	36.65
	French	37.00	0.13	0.08	0.14	37.36
	German	2.37	0.05	0.65	0.15	3.22
	Italian	3.88	0.43	1.77	0.58	6.65
	Jewish	0.15	0.01	0.01	0.02	0.19
	Netherlands	0.59	0.02	0.17	0.07	0.85
	Polish	1.19	0.14	0.45	0.08	1.87
	Scandinavian	0.64	0.06	0.09	0.03	0.83
	Ukrainian	2.87	0.34	0.40	0.01	3.61
	Other and Unknown	4.64	1.00	1.36	1.00	7.99
	Total	**87.56**	**3.11**	**6.03**	**3.29**	**100.00**

Census Metropolitan Area	Ethnic origin	Born in Canada (%)	Immigrated (%) Before 1946	1946-1960	1961-1971†	Total (%)
Thunder Bay	Asian	0.49	0.08	0.07	0.20	0.83
	British Isles	39.09	2.84	1.20	0.85	43.99
	French	6.12	0.09	0.03	0.05	6.29
	German	2.72	0.19	0.87	0.16	3.96
	Italian	5.60	0.48	2.24	1.14	9.46
	Jewish	0.13	0.03	0.03	0.02	0.21
	Netherlands	1.19	0.06	0.54	0.10	1.89
	Polish	2.70	0.54	0.85	0.12	4.20
	Scandinavian	3.13	0.60	0.17	0.03	3.92
	Ukrainian	7.86	1.35	0.47	0.03	9.71
	Other and Unknown	9.91	2.23	2.43	0.97	15.54
	Total	**78.92**	**8.49**	**8.91**	**3.67**	**100.00**
Toronto	Asian	0.86	0.11	0.24	1.50	2.70
	British Isles	45.28	3.65	4.10	3.86	56.90
	French	3.30	0.04	0.07	0.09	3.50
	German	2.32	0.16	1.45	0.51	4.40
	Italian	3.96	0.21	3.36	2.81	10.34
	Jewish	2.59	0.57	0.63	0.39	4.18
	Netherlands	0.94	0.04	0.57	0.14	1.69
	Polish	0.98	0.19	0.55	0.23	1.95
	Scandinavian	0.42	0.05	0.14	0.09	0.70
	Ukrainian	1.50	0.27	0.48	0.06	2.31
	Other and Unknown	3.86	0.47	2.74	4.22	11.29
	Total	**66.01**	**5.77**	**14.32**	**13.90**	**100.00**
Vancouver	Asian	2.20	0.38	0.73	2.07	5.38
	British Isles	46.59	5.72	3.37	2.87	58.56
	French	3.64	0.13	0.08	0.11	3.96
	German	5.43	0.56	1.63	0.66	8.29
	Italian	1.43	0.14	0.73	0.48	2.78
	Jewish	0.62	0.13	0.12	0.13	1.00
	Netherlands	1.75	0.13	0.84	0.23	2.95
	Polish	0.99	0.16	0.18	0.06	1.38
	Scandinavian	3.41	0.72	0.48	0.19	4.79
	Ukrainian	2.49	0.28	0.08	0.02	2.88
	Other and Unknown	4.97	0.59	1.19	1.28	8.03
	Total	**73.53**	**8.93**	**9.44**	**8.09**	**100.00**
Victoria	Asian	1.24	0.23	0.45	0.79	2.72
	British Isles	57.78	10.19	4.49	2.43	74.88
	French	2.86	0.14	0.09	0.06	3.14
	German	3.21	0.35	0.88	0.32	4.76
	Italian	0.57	0.04	0.22	0.11	0.94
	Jewish	0.16	0.02	0.04	0.03	0.25
	Netherlands	1.30	0.09	0.74	0.17	2.30
	Polish	0.65	0.10	0.12	0.03	0.90
	Scandinavian	2.60	0.47	0.34	0.11	3.52
	Ukrainian	1.18	0.10	0.05	0.01	1.34
	Other and Unknown	3.76	0.25	0.76	0.50	5.26
	Total	**75.30**	**12.00**	**8.16**	**4.54**	**100.00**

Table A5.1 *(Concluded)*

Census Metropolitan Area	Ethnic origin	Born in Canada (%)	Immigrated (%)			
			Before 1946	1946-1960	1961-1971†	Total (%)
Windsor	*Asian*	0.71	0.09	0.19	0.59	1.58
	British Isles	41.34	3.26	1.79	1.69	48.07
	French	19.95	0.22	0.12	0.16	20.45
	German	3.36	0.50	1.01	0.32	5.18
	Italian	3.36	0.39	2.36	1.68	7.79
	Jewish	0.57	0.20	0.13	0.10	1.01
	Netherlands	0.71	0.05	0.29	0.06	1.11
	Polish	1.39	0.42	0.32	0.14	2.27
	Scandinavian	0.33	0.06	0.05	0.04	0.48
	Ukrainian	2.05	0.41	0.20	0.03	2.70
	Other and Unknown	4.72	1.54	1.30	1.80	9.36
	Total	**78.49**	**7.14**	**7.77**	**6.61**	**100.00**
Winnipeg	*Asian*	0.54	0.07	0.11	0.63	1.35
	British Isles	36.61	3.40	1.43	1.52	42.97
	French	8.23	0.16	0.07	0.09	8.55
	German	8.25	0.80	1.97	0.45	11.48
	Italian	0.80	0.08	0.38	0.48	1.74
	Jewish	2.48	0.73	0.26	0.12	3.59
	Netherlands	2.03	0.14	0.48	0.13	2.78
	Polish	3.53	0.51	0.57	0.19	4.80
	Scandinavian	2.70	0.34	0.12	0.08	3.24
	Ukrainian	9.93	1.30	0.61	0.07	11.90
	Other and Unknown	5.01	0.43	0.83	1.32	7.60
	Total	**80.12**	**7.95**	**6.84**	**5.10**	**100.00**

*Because entries in this table are independently rounded, rows and columns may not add to totals.

† Includes the first five months only of 1971.

Sources:
Canada, Statistics Canada, *1971 Census of Canada: Population: Ethnic Groups by Birthplace*, Bulletin 1.4-10, Cat. No. 92-738 (Ottawa: Information Canada, 1974);

Canada, Statistics Canada, *1971 Census of Canada: Population: Characteristics of Persons Born Outside Canada*, Bulletin 1.4-12, Cat. No. 92-740 (Ottawa: Information Canada, 1974);

Special tabulation by Statistics Canada from 1971 census.

Notes

[1] John Porter, *The Vertical Mosaic* (Toronto: University of Toronto Press, 1965).

[2] In 1971, 19 percent of the foreign-born of Asian ethnic origin claimed English mother tongue, compared to only 5 percent of the foreign-born of Italian ethnic origin.

[3] David Millet, ''The Orthodox Church: Ukrainian, Greek and Syrian'', in *Immigrant Groups*, ed. Jean Leonard Elliott
Vol. 2 (Toronto: Prentice-Hall, 1971), pp. 47-65.

[4] Figures 5.3 to 5.8 exclude metropolitan areas where an ethnic group comprises less than 0.2 percent of their population. Below this level, the data may be unreliable because of sampling and rounding errors.

[5] Since the average census tract size is about 5,000 population, an ethnic group comprising 0.5 percent of the population would have an average of 25 persons of that origin per tract. Since the ethnic origin data were derived from a one-third sample of households and all data were randomly rounded to end in 0 or 5, the segregation indices based on data for ethnic groups comprising less than 0.5 percent of the population would be unreliable.

[6] M.A. Poole and G.W. Boal, ''Religious Residential Segregation in Belfast in Mid-1969: A Multi-Level Analysis'', *Social Patterns in Cities*, Institute of British Geographers, Special Publication No. 5 (London: 1973), p.31.

[7] The model was tested using multiple regression analysis, path analysis and partial correlation analysis. These techniques enable one to sort out the direct and indirect influences which operate in the model, and measure the strength of the direct and indirect links.

[8] The relationship between income and ethnic origin is discussed further in Chapter 6.

[9] The Native Indian population comprises more than 50 percent of the population of the few census tracts which are Indian Reservations, but special circumstances are involved. Two or three census tracts in Montréal may also be more than 50 percent Greek.

6 Neighbourhood types: the interdependence of the family life cycle, income and ethnicity

6.1 Introduction

The family life cycle, socio-economic stratification and cultural differences in the population are usually regarded as relatively independent dimensions of society. Analyses of data in a number of Canadian cities have confirmed that these same dimensions are also *relatively* independent when applied to census tracts rather than individuals.[1] In other words, a city usually has neighbourhoods displaying most of the possible combinations of measurements according to each of these dimensions. The relative independence of these dimensions, however, does not preclude a certain degree of interdependence. This chapter examines the amount of interdependence of the three dimensions of neighbourhood differentiation discussed in Chapters 3, 4 and 5. Interdependence is measured using both individuals (or families) and census tracts as units of analysis.

6.2 Income and the family life cycle

In Volume I of this handbook series, it was shown that average family incomes peak when the family head is in the age 45-54 category. Furthermore, the relationships between family incomes and age of the family head were remarkably consistent among urban-size classes and regions. Almost without exception, families in the youngest and oldest age categories had the lowest average income. We may be reasonably confident, therefore, that this same relationship between age and income holds for individual metropolitan areas and for Metropolitan Canada as a whole.

Table 6.1 shows the relationship between family income levels and the family life-cycle index of census tracts. Census tracts were first ranked according to their average family income and their life-cycle index, and each ranked listing was divided into four equal quartiles. Tracts were then cross-classified by their quartile scores on each measure. Table 6.1 shows, for example, that 63 census tracts were in the lowest quartile according to both their family life-cycle index and their average family income. If there were no relationship between the family life cycle and income, each cell in the table would account for about 140 tracts, one-sixteenth of the total number. The fact that the cell numbers deviate quite substantially from this figure demonstrates that the life-cycle profile of a census

tract's population is related to its average family income. For example, very high-income tracts tend to have either an exceptionally young or a very old population, while low-income tracts tend to have a moderately old population. It may be surprising that tracts with a moderately old population tend to have low incomes, in view of the fact that family incomes peak in the age 45-54 group. There is no simple explanation for this apparent contradiction. All that can be said at present is that the relationships between incomes and age at the family level of analysis differ from the relationships at the census tract level of analysis.

Table A6.1 presents data similar to Table 6.1 for each CMA. The relationships between the age structure and income levels of census tracts vary somewhat among metropolitan areas. Low-income census tracts are more likely to have an older population in Québec City and Winnipeg, for example, than in most metropolitan areas. For the most part, however, once metropolitan differences in age and income are taken into account, the relationships between the age structure and income levels of census tracts are quite consistent. Nevertheless, this relationship in most cities is quite weak, and the usual statement that the life cycle and income dimensions of neighbourhood differentiation are largely independent is substantiated.

Table 6.1 Frequency distribution of census tracts by life cycle and income, Metropolitan Canada, 1971*

Life-cycle quartile	Income quartile				
	1 (low)	2	3	4 (high)	Total
1 (young)	63	122	201	177	563
2	133	160	154	120	567
3	204	167	106	87	564
4 (old)	151	112	104	181	548
Total	**551**	**561**	**565**	**565**	**2242**

* The 2,267 census tracts in metropolitan Canada were ranked according to their average family income and their family life-cycle index. Each ranked listing was divided into four quartiles, with equal numbers of tracts in each, and tracts were classified according to their quartile number on each measure. Since tracts with fewer than 50 families were then excluded from this table, the row and column totals vary slightly.

6.3   The family life cycle and ethnicity

Table 6.2 cross-classifies the 1971 population of Metropolitan Canada according to ethnic origin and age. Ethnic groups varied considerably in their age structure. The Asian, Italian and Dutch ethnic groups were particularly young, while the British, Jewish, Polish, Scandinavian and Ukrainian groups were particularly old. Differences in the age structure of ethnic groups arise mainly from differences in the timing of immigrant arrivals and differences in their fertility rates.

Table 6.3 presents a summary measure of the age structure of the population of each ethnic group in each metropolitan area in 1971. The measure is the ratio of the population over 45 to the population under 15.[2] The data confirm that the ethnic differences in age structure which apply to Metropolitan Canada, with few exceptions, also apply to each metropolitan area.

The implications to be drawn from ethnic differences in age structure are of two types. First, since age structure is closely related to birth and death rates, differences in the age structure of ethnic groups will produce a certain amount of change in the ethnic composition of metropolitan areas in the future. Even in the absence of further immigration, most metropolitan areas may be expected to become more Asian, French,

German, Italian and Dutch, and less British, Jewish, Polish, Scandinavian and Ukrainian in ethnic origin. Differential rates of fertility and mortality, immigration and emigration, and internal migration of ethnic groups, however, also effect changes in the ethnic composition of metropolitan areas. Ethnic change, therefore, is not completely predictable from the 1971 age distribution of ethnic groups.

The second implication of the data in Table 6.3 concerns the relationship between the ethnic and life-cycle characteristics of metropolitan neighbourhoods. If residential location decisions were made solely on the basis of stage in the family life cycle, we would expect an ethnic group to be distributed in accordance with its age structure. Thus, an ethnic group with an older population would tend to live in the inner city, and ethnic groups with a preponderance of young families would tend to live in new suburban areas where families at that stage in the life cycle are most commonly found. This is not generally the case, however. Instead, Italian and Asian neighbourhoods in the inner city tend to have a younger population than most other inner city neighbourhoods. Thus, ethnic patterns modify the patterns of the family life-cycle index. Where an ethnic minority group is fairly large relative to the metropolitan area's population, "ethnic" neighbourhoods are themselves

Table 6.2 Age distribution of ethnic groups, Metropolitan Canada, 1971

Ethnic origin	Age group (%)										
	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-69	70 +
Asian	10.6	9.8	8.3	6.8	9.7	22.0	14.9	7.0	5.2	2.0	3.7
British Isles	7.7	9.5	9.9	9.4	9.4	13.2	11.3	11.5	8.8	3.0	6.5
French	8.0	10.3	10.7	9.8	9.8	15.5	12.4	10.3	7.3	2.4	3.6
German	8.1	10.0	9.5	8.1	8.7	16.0	15.2	10.6	7.3	2.6	4.0
Italian	10.9	11.9	10.2	7.7	8.6	15.4	16.0	9.8	5.7	1.5	2.2
Jewish	6.1	6.9	7.9	9.1	9.6	12.1	10.6	13.5	12.8	4.5	6.9
Netherlands	9.2	11.9	12.2	9.3	8.8	14.0	14.2	10.4	5.8	1.7	2.4
Polish	5.9	7.9	8.9	9.9	9.3	11.8	12.6	15.6	9.6	3.8	4.9
Scandinavian	7.4	8.8	8.9	8.5	9.9	15.4	12.6	11.1	8.1	3.5	5.8
Ukrainian	6.6	8.2	8.9	8.9	8.9	13.1	12.7	14.7	9.2	3.6	5.1
Other and Unknown	9.8	10.1	8.7	7.7	8.6	17.7	15.1	9.9	6.2	2.7	3.4
Total	**8.1**	**9.8**	**9.9**	**9.1**	**9.4**	**14.5**	**12.5**	**11.0**	**7.9**	**2.7**	**5.0**

Source:
Canada, Statistics Canada, *1971 Census of Canada: Population: Ethnic Groups by Age Groups*, Bulletin 1.4-3, Cat. No. 92-731 (Ottawa: Information Canada, 1974).

differentiated according to stage in the family life cycle. In these instances, ''ethnic'' neighbourhoods with a young population tend to be suburban, while those with an older population tend to be more centrally located.

6.4   Income and ethnicity

The relationship between income and ethnic origin in Canada has seldom been documented objectively, perhaps because people may be somewhat sensitive to this issue. There is little reason, however, to maintain an air of secrecy about the relationship. In fact, good data to demonstrate the association may serve to stimulate further research into the reasons for the association, thereby discouraging people from attributing it solely to prejudice, discrimination, favouritism, etc. Among the factors contributing to eth-

nic differences in income, the Royal Commission on Bilingualism and Biculturalism cited the following: patterns of settlement, time of arrival, age distribution, immigrant and ethnic occupations, ethnic values, education, religion, the incidence of discrimination and exploitation, and the problems created by language barriers.[3] While this chapter falls short of providing a full explanation for the relationship, it does provide data on the strength of the relationship and demonstrates its importance for social patterns in Metropolitan Canada.

In recent censuses, data pertaining to the relationship between income and ethnic origin have not been included in the normal series of published tabulations. Special tabulations based on the 1961 census, however, showing average income levels of the male labour force of several ethnic origins, were prepared for the Royal Commission on Bilingualism and Bicul-

Table 6.3 Age structure ratio of ethnic groups, Census Metropolitan Areas, 1971*

Census Metropolitan Area	Asian	British	French	German	Italian	Jewish	Netherlands	Polish	Scandinavian	Ukrainian	Other and Unknown	Total
Calgary	48	81	55	63	44	124	53	98	85	71	59	73
Chicoutimi-Jonquière	100†	61	60	66	77†	—†	30†	100†	93†*	120†	100	60
Edmonton	47	74	65	65	48	131	55	95	81	92	54	72
Halifax	48	82	88	89	58	198	77	37	73	34	56	81
Hamilton	67	106	64	89	63	161	51	162	82	167	96	99
Kitchener	37	81	58	117	53	108	57	134	70	159	61	87
London	40	112	65	90	59	155	50	162	104	150	63	101
Montréal	80	127	87	103	67	193	76	190	100	215	77	95
Ottawa-Hull	40	104	70	78	50	156	55	104	87	90	54	84
Québec	51	136	87	83	60	150	88	163	117†	233†	68	88
Regina	47	92	66	99	53	224	75	91	97	78	75	89
St. Catharines-Niagara	74	104	65	114	74	164	56	159	156	187	129	102
St. John's	53	72	59	76	150†	71†	22†	—†	66	—†	66	71
Saint John	64	104	72	73	34	279	127	367†	75	100†	81	99
Saskatoon	56	101	64	74	55	196	75	100	86	94	74	89
Sudbury	47	57	48	67	73	120†	58	135	103	138	105	61
Thunder Bay	114	97	87	87	65	175†	50	158	140	171	132	105
Toronto	59	113	75	90	50	170	63	170	94	183	75	99
Vancouver	69	144	104	89	68	178	66	153	152	142	86	122
Victoria	71	181	100	116	90	145	78	151	136	145	69	156
Windsor	66	96	84	115	62	190	67	177	152	185	119	96
Winnipeg	62	120	78	92	59	219	66	162	143	156	66	112
Metropolitan Canada	62	110	81	89	58	180	61	149	114	138	78	96

* Entries in this table represent the ratio of the population aged 45 and over to the population under 15 years of age, for each ethnic group in each CMA in 1971. † Refer to ethnic groups representing fewer than 300 persons in a particular metropolitan area. Because of sampling and random rounding errors, these entries should be used with caution.

Source:
Canada, Statistics Canada, *1971 Census of Canada: Population: Ethnic Groups by Age Groups*, Bulletin 1, 4-3, Cat. No. 92-731 (Ottawa: Information Canada, 1974).

turalism. The data to be presented in this chapter provide similar, though not completely comparable, data for a larger number of metropolitan areas and a larger number of ethnic groups, based on the 1971 census.

Table 6.4 shows the average family income by ethnic origin of the family head in each CMA relative to an index value of 100 for all ethnic groups combined in Metropolitan Canada. The value of 105 for the British in Calgary, for example, indicates that families whose head was of British ethnic origin had an average income 5 percent higher than the average family income in Metropolitan Canada.

In Metropolitan Canada as a whole, families with Italian heads had the lowest average family income, at 88 percent of the metropolitan average. Families with French, Ukrainian and Polish heads also had average incomes which were significantly below average, while families headed by persons of British and Jewish ethnic origin had above-average incomes—almost 50 percent above average in the case of Jewish families. There is also a remarkable degree of consistency among metropolitan areas in the ranking of ethnic origins according to average family income. Furthermore, the ranking of the major groups appears not to have changed since 1961.[4]

The relationship between ethnic origin and income in most metropolitan areas results in a degree of correspondence between the income maps on the one hand and the maps of ethnic diversity and of individual ethnic groups on the other hand. Notice, for example, the correspondence between high-income areas and areas with a sizable British ethnic minority in Québec City. The most Ukrainian and Polish census tracts in Winnipeg have very low incomes, and Ukrainians are

Table 6.4 Family income and ethnic origin, Census Metropolitan Areas, 1971*

Census Metropolitan Area	British	French	German	Italian	Jewish	Netherlands	Polish	Scandinavian	Ukrainian	Asian	Other and Unknown	Total
Calgary	105	91	96	95	163	101	97	98	98	91	91	101
Chicoutimi-Jonquière	101	84	83	88†	120†	96†	86†	105†	96†	97†	93	85
Edmonton	106	88	95	87	182	94	92	97	93	88	88	99
Halifax	94	87	94	94	204	87	113	97	104	104	85	94
Hamilton	103	88	99	91	166	96	97	113	98	93	89	100
Kitchener	100	91	101	86	187	94	94	103	96	86	88	99
London	102	91	99	87	177	95	92	103	97	90	89	100
Montréal	115	89	108	81	136	117	98	117	92	92	84	95
Ottawa-Hull	124	95	116	91	175	114	110	126	119	100	104	111
Québec	104	93	101	86	247	93†	108†	117†	111†	105	88	94
Regina	97	83	82	81	164	95	84	84	86	110	76	89
St. Catharines-Niagara	96	84	95	86	154	89	85	100	89	105	88	93
St. John's	78	87	103	70†	185†	97†	180†	87	203†	128	76	79
Saint John	83	71	94	81	134	77	95†	78	102†	113	70	82
Saskatoon	96	79	83	65	182	81	76	87	78	96	79	88
Sudbury	114	103	112	110	184†	106	112	107	111	104	107	109
Thunder Bay	101	92	101	92	157†	84	89	93	89	95	81	94
Toronto	116	98	113	89	156	108	101	122	102	91	91	110
Vancouver	104	89	94	92	155	96	91	91	91	83	88	99
Victoria	94	84	90	86	114	88	90	89	87	86	82	92
Windsor	108	98	102	102	178	112	106	109	102	104	97	105
Winnipeg	98	81	90	80	140	89	84	93	83	92	78	93
Metropolitan Canada	**107**	**91**	**99**	**88**	**149**	**99**	**95**	**98**	**93**	**90**	**85**	**100**

* Average total family income is expressed as a percent of the average for Metropolitan Canada (i.e., $10,788). Families are classified according to the ethnic origin of the family head, i.e., the husband in a husband — wife family, or the parent in a one-parent family.

Source:
Special tabulation prepared by Statistics Canada from 1971 census.

† Involve fewer than 100 families, and are considered to be unreliable.

noticeably absent from the highest-income areas in Edmonton. No census tract in Metropolitan Canada with over 10 percent of its population of Italian, Polish or Ukrainian ethnic origin had an average family income over $15,000.[5] Only 5 of the 65 census tracts in which over 10 percent of the population was of Asian ethnic origin had an average family income in excess of even $10,000. On the other hand, of the 101 tracts whose population was over 10 percent Jewish, 44 had an average family income over $15,000. Thus, "ethnic" neighbourhoods in Metropolitan Canada, other than Jewish neighbourhoods, usually have below-average incomes.[6]

Even though income is related to ethnic origin both at the individual family level and at the census tract level of analysis, ethnic neighbourhoods in a metropolitan area often span a fairly wide range of income levels. Italian census tracts in Toronto, for example, were found in all four income quartiles, though not in the same proportions as non-Italian neighbourhoods (Table 6.5). When an ethnic group is large enough to comprise a significant proportion of the population in a large number of census tracts, these census tracts tend to be quite strongly differentiated according to their income levels, provided that the family incomes of that ethnic group also span a wide range. When the ethnic group is small or when its family incomes fall within a relatively narrow range, its ethnic neighbourhoods are less likely to differ greatly in income levels.

Just as ethnic differences often complicate the pattern shown on maps of the family life-cycle index, so the ethnic pattern of a city is often the result of ethnic differences in income. If an ethnic group tends to have low incomes, naturally it is found mainly in low-income areas of the city; while high-income ethnic groups live mainly in high-income neighbourhoods. In Canada,

however, persons of all ethnic origins are found at all income levels, with the result that ethnic neighbourhoods are themselves very often differentiated in terms of income. Thus, not only are ethnic groups segregated from each other, but the high-income population of an ethnic group is likely to be segregated from its lower-income counterparts.

6.5   Conclusion

Data presented in this chapter confirm the relative independence of the three basic dimensions of neighbourhood differentiation: stage in the family life cycle, socio-economic status (as measured, for example, by income levels), and ethnic origin of the population. Although in many cities there is a modest degree of association among these measures, all three are essential components of a neighbourhood typology.

Even modest degrees of association among the basic dimensions of neighbourhood differences can be a major source of urban unrest. When minorities occupy particularly disadvantaged or advantaged positions in terms of socio-economic status, the potential for ethnic strife is greater than when the ethnic and socio-economic dimensions are completely independent. Relationships between income and age can be a source of antagonism between age groups. The age distribution of ethnic groups bears the seeds of ethnic change, which some perceive as a threat to the established order. When associations between the life cycle, income and ethnicity at the family level are also expressed in the pattern of neighbourhood characteristics, their significance is all the greater. When most members of an ethnic minority have low incomes and live mainly in low-income neighbourhoods, for example, their disadvantaged position is probably more apparent both to themselves and to the rest of the population, than when they are spread more evenly about the city. When patterns of segregation according to income reinforce patterns of segregation according to age or ethnicity, the potential for social conflict increases.

Much more research is needed, however, to demonstrate the direction of change in the modest association among the three basic dimensions of neighbourhood variations. In fact, even the patterns of neighbourhood change in each of these dimensions individually are poorly documented and worthy of much more intensive investigation. The data and discussion in this chapter and in this volume are confined primarily to 1971. As such, they serve merely as an introduction to the much longer-term task of identifying the changing patterns of neighbourhood characteristics in Metropolitan Canada.

Table 6.5 Italian ethnicity and family income. Toronto CMA, 1971

Percent of population of Italian ethnic origin	Number of census tracts in each quartile according to average family income*				
	1 (low)	2	3	4 (high)	Total
Under 10.0	38	38	97	163	336
10.0−24.9	11	11	12	13	47
25.0+	20	19	19	0	58
Total	69	68	128	176	441

* Quartiles are based on the frequency distribution of all census tracts in Metropolitan Canada according to their average family income.

Table A6.1 Frequency distribution of census tracts by life cycle and income, Census Metropolitan Areas, 1971*

Life-cycle quartile	Income quartile				Total
	1 (low)	2	3	4 (high)	
Calgary					
1 (young)	1	9	9	17	36
2	2	5	4	2	13
3	4	4	3	3	14
4 (old)	4	7	—	3	14
Total	11	25	16	25	77
Edmonton					
1 (young)	5	10	13	10	38
2	5	9	5	2	21
3	5	9	5	2	21
4 (old)	2	1	1	3	7
Total	17	29	24	17	87
Halifax					
1 (young)	2	6	5	3	16
2	1	5	5	2	13
3	4	3	1	1	9
4 (old)	1	2	—	6	9
Total	8	16	11	12	47
Hamilton					
1 (young)	1	3	9	10	23
2	3	—	13	7	23
3	16	9	8	6	39
4 (old)	3	2	12	5	22
Total	23	14	42	28	107
Kitchener					
1 (young)	—	1	5	5	11
2	1	7	1	4	13
3	1	3	6	1	11
4 (old)	3	3	3	1	10
Total	5	14	15	11	45

Table A6.1 *(Continued)*

Life-cycle quartile	Income quartile				Total
	1 (low)	2	3	4 (high)	
London					
1 (young)	—	2	6	3	11
2	—	4	4	5	13
3	6	5	7	3	21
4 (old)	1	5	2	4	12
Total	7	16	19	15	57
Montréal					
1 (young)	27	49	45	25	146
2	56	38	21	14	129
3	75	41	15	20	151
4 (old)	53	26	19	42	140
Total	211	154	100	101	566
Ottawa-Hull					
1 (young)	2	11	13	18	44
2	4	6	9	9	28
3	5	2	4	5	16
4 (old)	5	5	7	14	31
Total	16	24	33	46	119
Québec					
1 (young)	6	10	9	8	33
2	5	15	3	2	25
3	7	3	—	2	12
4 (old)	14	3	1	5	23
Total	32	31	13	17	93
Regina					
1 (young)	3	3	2	1	9
2	1	2	—	1	4
3	3	4	—	2	9
4 (old)	4	2	1	—	7
Total	11	11	3	4	29
St. Catharines-Niagara					
1 (young)	—	—	3	1	4
2	1	7	9	1	18
3	3	10	5	2	20
4 (old)	2	5	2	2	11
Total	6	22	19	6	53
St. John's					
1 (young)	3	1	2	2	8
2	7	1	—	1	9
3	7	2	—	—	9
4 (old)	—	—	—	2	2
Total	17	4	2	5	28

Life-cycle quartile	Income quartile				
	1 (low)	2	3	4 (high)	Total
Saint John					
1 (young)	4	1	1	1	7
2	6	4	—	—	10
3	9	4	1	2	16
4 (old)	6	2	1	1	10
Total	25	11	3	4	43
Saskatoon					
1 (young)	—	2			6
2	2	1	—		4
	4		—	—	4
4 (old)	2	2	2	1	7
Total	8	5		2	21
Sudbury					
1 (young)	—	—			
2		2		4	9
	—	—	4	2	6
				—	—
Total					27
Thunder Bay					
1 (young)	1	—		1	4
2	—		4	1	
				1	7
4 (old)	2	3		1	7
Total	4	9	8	4	25
Toronto					
1 (young)			40	5	107
				46	149
3			19	21	89
				56	96
Total	68	68	128	176	441
Vancouver					
1 (young)	1	1	15	7	24
2	3	12	10	9	34
3	12	28	14	8	62
4 (old)	12	14		18	55
Total	28	55	50	42	175
Victoria					
1 (young)	—	—			—
2	—	2	1	1	4
3	5	3	4	1	13
4 (old)	7	6	6	5	24
Total	12	11	11	7	41

Table A6.1 *(Concluded)*

Life-cycle quartile	Income quartile				
	1 (low)	2	3	4 (high)	Total
Windsor					
1 (young)	—	—	2	4	6
2	1	6	9	6	22
3	2	5	6	3	16
4 (old)	3	2	3	4	12
Total	6	13	20	17	56
Winnipeg					
1 (young)	1	5	9	3	18
2	2	7	8	2	19
3	12	2	3	2	19
4 (old)	20	13	8	8	49
Total	35	27	28	15	105

* The 2,267 census tracts in metropolitan Canada were ranked according to their average family income and their family life cycle index. Each ranked listing was divided into quartiles with equal numbers of tracts in each, and tracts were classified according to their quartile number on each measure. Census tracts with fewer than 50 families were then excluded from this table.

Notes

[1] See, for example, A.A. Hunter and A.H. Latif, ''Stability and Change in the Ecological Structure of Winnipeg: A Multi-Method Approach'', *Canadian Review of Sociology and Anthropology,* Vol. 10 (1973), pp. 308-333; Robert A. Murdie, *Factorial Ecology of Metropolitan Toronto*, University of Chicago, Department of Geography, Research Paper No. 16 (Chicago: 1969); Kent P. Schwirian, ''Analytical Convergence in Ecological Research: Factorial Analysis, Gradient, and Sector Models'', in *Models of Urban Structure*, ed. David C. Sweet (Lexington, Mass.: Lexington Books, D.C. Heath and Company, 1972), pp. 135-158.

[2] This measure was discussed in Volume I, Chapter 5, where it was termed the family life-cycle index used in Volumes II and III to summarize the age distribution of the population of census tracts, and is sufficiently sensitive to age differences in the populations of entire cities or of entire ethnic groups. The simpler ratio shown in Table 6.3, however, does not make sufficient distinction between neighbourhoods where most family heads are in the age 25-34 group and those where most family heads are in the age 35-44 group, to be useful at the census tract level.

[3] Royal Commission on Bilingualism and Biculturalism, *Report*, Vol. IV (Ottawa: Queen's Printer, 1969), pp. 40-41.

[4] Since family incomes are used in Table 6.4, while the Royal Commission on Bilingualism and Biculturalism based its findings on incomes of the male labour force, it is not possible to state whether ethnic disparities in income increased or decreased between 1961 and 1971.

[5] Dutch and Scandinavian could be added to this list, but the small number of census tracts involved would make their inclusion misleading.

[6] The relationships between ethnic origin and income are such that usual types of analysis performed on census tract data underestimate the strength of the association. While not all neighbourhoods with low incomes in Toronto are Italian, for example, most of Toronto's Italian neighbourhoods have fairly low incomes. Thus, because of the nonreciprocal nature of the association between Italian ethnicity and income, the correlation coefficient (the most common means of measuring association) between these two characteristics of census tracts is low ($-.28$).

Technical note: Cartography

David H. Douglas

Highlights

The maps appearing in Volumes II and III illustrate the spatial patterns of the social, demographic and cultural landscapes of Canada's 21 tracted Census Metropolitan Areas (CMAs). By mapping special indices and certain key ratios, the information contained in an intractable multitude of possible census tabulations is presented in a manageable number of maps. These indices and ratios have simultaneously been calculated for each of the 2,267 census tracts for all of the 21 tracted CMAs; therefore, the resulting value obtained for each index, for each tract, is not only comparable to values calculated for neighbouring tracts within its own CMA, but is directly comparable to those in the other CMAs, as well. This comparability has been carried over to the symbol conventions and legends, and, in addition, each city is presented at the same geographic scale of 1:400,000.

The maps have been designed to produce clear uncomplicated images to enable the general user to quickly identify the important spatial characteristics of the metropolitan population of Canada. For the reader interested in the technical details of the cartographic methods employed, this appendix explains the conventions, definitions and procedures utilized.

Subject generalization

The partitioning of a metropolitan area into census tracts for the purpose of aggregating and analyzing statistical distributions is a generalization of reality in a spatial sense. Indices and ratios designed to summarize the census data also represent a type of generalization, but of the multifarious distributions and relations contained in the wealth of raw data available. The statistical analyses have resulted in the identification of three broad components or dimensions of differentiation: socio-economic status, stages in the life cycle and cultural variation. Quantitative geographic research reduced the volumes of possible tabulations to a few meaningful indices. The methodologies behind the processes utilized are described in detail in the chapters where the maps appear, and in the appendices to those chapters.

The maps in Volume II focus on neighbourhoods of special interest, whether these are regions of extremes in family income or regions of concentration of specific ethnic groups. Volume III presents a series of maps showing average family income and two special indices. One is an index to summarize family life cycle and the other is an index of ethnic diversity. By mapping these indices and carefully selected ratios, the distributions found to be important are communicated in as few maps as possible.

Quantitative symbolism and map design

In a hierarchy of information to be communicated by the maps, the economic and social ratios and the derived indices occupy the prime level. Index and ratio values are illustrated by colours corresponding to a colour key. The colour is applied to a circle which varies in size to represent the total population of the tract. The population of the tract represents a second level, both in the intellectual and in the graphic hierarchies. Lower levels in the ranking of information types to be transmitted by the maps include the signal information employed to provide a base map and the tract boundaries themselves. These lower levels of information types are illustrated in such a manner to make them recede to the background of the overall image presentation. The techniques utilized include overlapping, the use of subdued shades, reductive generalization and the gross filtering of features. In general, important shorelines, a very few roadways and municipal boundaries are the only features shown.

The maps were designed to produce as clear and as uncluttered an image as possible to direct attention to the distributions contained in the statistical indices that have been calculated. They have been cartographically generalized to conform to the spatial resolution of the data.

Colour keys to represent value ranges in the maps of average family income, the family life cycle index and the ethnic diversity index, presented in Volume III, were designed so that the whole range of values for each variable would be categorized into four groups. The method utilized to separate the categories is commonly referred to as histogram equalization. The 2,267 values for each index were sorted into ascending order and divided so that an equal number of tracts would fall into each category. These groupings are then referred to in the text as quartiles.

Neighbourhoods of special interest are illustrated by the maps in Volume II which focus on the extremes of a distribution, rather than the whole extent of it. For each Census Metropolitan Area, tracts with an average family income of less than $7,500 or more than $15,000 are shown on the same map.

Local concentrations of persons of specific ethnic groups are shown when the ratios are above threshold values selected to identify characteristic neighbourhoods. Where possible, two or more ethnic group concentrations are shown on one base map, but additional maps are employed when the overlapping is extensive.

The ratio and index value calculated for each tract applies to the population of that tract, therefore, the colour representing the value range into which that tract falls is applied to a circle graduated to represent that population. The circle area is graduated to be proportional to the population of the tract according to methodologies suggested in recent literature and discussed in more detail in the Technical Appendix to Volume I. The purpose of applying the colour to a circle rather than to the whole area of the tract is to direct attention to each tract according to its population. The size scale of the circles was determined by the amount of overlapping that could be tolerated in the most densely populated regions. One way of picturing the relationship between the population of the census tract and the apparent area of the circle is to imagine that everyone living in the tract moved to position himself in the circle. The population density of all the circles then would be the same for all circles, for all maps, at approximately 20 square metres per person.

Except in a very few cases where the whole circle would have been placed entirely outside the boundaries of the tract (i.e., multi-island and irregularily shaped tracts), each circle was centred precisely at the spatial centroid of the tract. No attempt was made to position the circle to make it representative of distributions within the tract.

With maps graphically composed to reflect a ranking of information importance, the significant spatial characteristics of the Canadian metropolitan population are displayed with a colour scale, applied to proportional circles on subdued base maps for each of the 21 tracted CMAs.

Intermap comparability

Besides presenting the spatial patterns that occur with the Census Metropolitan Areas, a prime purpose of the series of maps is to present a graphic comparison between the Census Metropolitan Areas. To achieve this end it was an initial objective to present all of the maps at the same geographic scale. However, a desire to fit each map on a single page without employing foldouts meant that some of the maps of the smaller cities would be less than an inch across. A compromise was struck by letting the city with the fourth largest east-west extent, Ottawa, dictate the

scale, since Ottawa was the largest of a second cluster of city sizes. Montreal, Toronto and Edmonton were trimmed to show less than their full spatial extents. The Metropolitan Area of Edmonton is surrounded by very large sparcely populated census tracts, therefore none of the important features were sacrificed because of the trimming. This was not the case for Montreal and Toronto. Special maps were produced at a smaller scale to show the whole spatial extent of these two areas. The scale of these two special maps is 1:600,000, while all of the rest of the maps, including those of "inner" Montreal and "inner" Toronto, are at 1:400,000. Since all of the maps, except the two noted, are at the same scale, the circles representing the population of the tracts are also directly comparable from city to city.

The statistical studies were carried out on the 2,267 census tracts simultaneously. Each index and ratio, where shown, corresponds exactly from CMA to CMA. The quartile ranges for each of the special indices, and for the average family income series since they were calculated with all 2,267 tracts, also correspond for all of the CMAs.

The calculation and presentation of exactly comparable indices, and the utilization of a common geographic map scale assures direct intermap comparability.

Technical details and plate production

All maps were produced in their preliminary form from digital data on a computer-controlled plotter with computer programs written by W. Raze and D. Douglas. Unlike the pillar maps in Volume I, the line quality of the plotter-produced circles and the census tract boundaries was not up to a sufficient cartographic standard for direct photo-chemical plate production, this owing to the rather large number of sliver errors in the sequential boundary files, and to the accuracy of the available plotting equipment. The map plates were rescribed by hand, tracing from the plotter output at the final map scale. The computer-plotter-produced copy,

however, greatly facilitated the production of these plates in a number of ways. Firstly: the moment centre, or centroid of each of the 2,267 tracts was instantaneously calculated from the Statistics Canada Area Boundary File. Secondly: a circle plotting program matched each value to its centroid, calculated the appropriate radius and plotted the circle, with hidden arcs removed where the circles overlapped. Thirdly: a program assigned the value levels and produced a plot for each level showing an asterisk at the centre of each tract assigned to that level. These plots were employed by the draughtsmen as underlays to assist in the task of peeling the photo-etched "peel coats" for each level plate. Lastly: mention has to be made of the statistical studies, both those reported here and those leading to this report, all of which were performed by computer on the 2,267 census tracts.

All of the lettering and legend work was done by hand by cartographic draughtsmen.

Conclusion

The maps appearing in Volumes II and III are generalizations of the socio-economic, demographic and cultural distributions that occur in Canada's 21 tracted Census Metropolitan Areas. It is important to recognize that they, (as indeed all maps), do generalize reality in both their spatial resolution and in the subject matter represented by their individual titles. Computer techniques were utilized to merge the mapping process with the statistical studies which form the foundation of the entire project.

Glossary

Age-sex distribution, structure
The proportions of total population in specific age-sex groups; also used for age or sex separately

Education index
Ratio of the number of persons ever attending university to every 100 persons who did not attend school beyond grade 8. This index is compiled from those persons over 5 years of age and not attending school.

Family life-cycle index
A measure of the relative stage in the life cycle of families in terms of age and combinations of age groupings which characterize a neighbourhood

Index of ethnic diversity
A measure of distribution of the metropolitan population among 12 ethnic groups. It equals $1 - \Sigma p_i^2$; where p_i = the proportion of a census tract's population in the ith ethnic group.

Natural increase
Population growth resulting from a surplus of births over deaths of the resident population

Segregation index
A measure of the distribution among a city's census tracts of the following characteristics:
a) age groups
b) ethnic groups
c) income groups